2019 Proposed Inlet Hazard Area (IHA) Boundary Update & Rule Amendments: Public Hearing Comments (*summary of verbal comments*)

Hearing Record: December 1, 2019 to March 2, 2020

Brunswick County

Public Hearing held on Tuesday, December 17, 2019 at 10:00 AM, at the Brunswick County Government Complex (30 Government Center Drive, Bolivia, NC 28422)

DCM Staff Attendees:
Ken Richardson

Coastal Resource Commissioner Attendees:
Renee Cahoon (CRC Chair)
Craig Bromby

Public Comments:

Jay Holden: is the Mayor of Holden Beach. Signed up to provide public comments, but decided to delay his comments, and/or submit written comments with the Town of Holden Beach.

Vicki Myers - (holden3@ec.rr.com, 704-846-3193): is a resident of Holden Beach and currently serves on the Town's Planning and Zoning Board. Mrs. Myers expressed her concern with the size of the proposed Inlet Hazard Area boundary on the western end of Holden Beach (at Shallotte Inlet), and questioned why the boundary is so large since that area has a wide and healthy dune system, and where the island has been accreting for many years in comparison to the boundary proposed on the eastern end of the Holden Beach (at Lockwood Folly Inlet); where erosion has historically been a problem. She disagrees with the fiscal analysis, and suggested that there would be a fiscal impact on those properties that would be included inside the proposed new boundaries. In addition, she suggested that:

- the Inlet Hazard Area Method (IHAM) developed by the Coastal Resources Commission's (CRC) Science Panel works for areas with erosion, but not accretion.
- the mapping method does not take into account beach nourishment.
- based on the linear regression analysis, transect #45 (at Shallotte Inlet – Holden Beach) appears that it would have been a more appropriate stopping point for the alongshore boundary of the proposed Inlet Hazard Area.
- Property owners impacted by the proposed boundary changes and rule amendments should have been involved in the process, and better informed before the proposed Inlet Hazard Area boundaries (and rule amendments) were submitted to the CRC and before public hearings were scheduled.

Mike Sullivan – (sullivanye@gmail.com): Signed up to provide public comments, but decided to postpone comments.

Tom Myers – (tmmyers@atmc.net, 704-905-6208): is a Holden Beach Resident and President of the Holden Beach Property Owners Association (HBPOA). Suggests that the proposed Inlet Hazard Area(s) would have a huge impact on property owners, and would have liked to have seen the process involve more input from property owners. The proposed IHA boundary at Holden Beach's west-end doesn't make sense given that there is not much erosion, especially when compared to erosion on the other side of Holden Beach (east side at Lockwood Folly Inlet).

Tim Evans – Town of Holden Beach Planning & Inspections Director provided a summary of the Town's initial concerns, but mentioned that the Town would be submitting formal comments in writing, and would include more details regarding these concerns:

- The Inlet Hazard Area Method (IHAM) developed by the Science Panel did not include data collected locally (or the Town's data).
- Suggested that the number of structures affected is inaccurate, and that it might be higher that what was reported in the CRC's fiscal analysis.
- Area identified as the proposed IHA does not meet the definition in the CRC's rules - especially the boundary at the west end of Holden Beach. Stated that the Town has never lost structures on that end as a result of erosion, and that it has been accreting for a long time. Referenced CRC Rule *15A NCAC 07H. 0304(2) Inlet Hazard Area. The IHA are natural-hazard areas that are especially vulnerable to erosion, flooding, and other adverse effects of sand, wind, and water because of their proximity to dynamic ocean inlets*.
- Suggested that those communities participating in the National Flood Insurance Program's (NFIP) Community Rating System (CRS) may not always get credits (50) as a result of the CRC's setback rules, and that there is no guarantee that this would be a benefit in future CRS evaluations, and cautioned the CRC when including this as a benefit in the fiscal analysis.
- Concerned with the structure size limitation in the proposed rules that limits all structures to 5,000 square feet. Suggested that smaller homes within the proposed IHA are being replaced with larger structures exceeding the 5,000 square feet limit, and that limiting size would result in a fiscal impact, and was not captured in the CRC's fiscal analysis.
- Suggested that outlier data are influencing the extent of the proposed IHA boundary on the west end of Holden Beach.
- Asked if CRC has an appeal process similar to FEMA's Flood Zone change request so that when a property owner (or Town) believes a property was incorrectly included in the National Flood Insurance Program's Special Flood Hazard Area they can submit a change request?

Brunswick County Post-Public Hearing Questions and Informal Concerns:

Immediately following the public hearing, Staff were available to take questions; many of which were based on efforts to better understand the mapping methodology and proposed rule amendments, while others were based on concerns expressed during the formal portion of the public hearing. For the purposes of this summary, "informal concerns" are those expressed by attendees who chose not to sign up to speak. The following are summaries of those questions:

- Size of the proposed IHA at Shallotte Inlet on Holden Beach (west-side)? Compared to other proposed boundaries at other inlets, this boundary is very large, and questioned how an area that's been accreting (since the 1960's) can be so extensive landward and alongshore compared to inlet areas where erosion is a significant problem and structures have been lost as a result.
- Standard Deviation graphs used identify the alongshore location where inlet related processes no longer have a "dominate" effect on the shoreline's position? Given that the graphs in the report are not at the same scale (x and y axis), it was suggested that if the graphs were scaled the same (or differently), that the inlet-ocean transition point (or alongshore boundary) would be in a different location. It was suggested that transect #45 at the Shallotte Inlet side of Holden Beach seems like it would have been a more appropriate location. Suggestions were made that the Science Panel's IHAM did not work in areas that are accreting since the standard deviation graphs were applied without considering the differences between accretion vs. erosion.
- The definition of an IHA in CRC's rules doesn't seem applicable to the entire area inside the proposed IHA at the Shallotte Inlet side of Holden Beach. Again, no structures have been lost to erosion, and the area has been accreting for a long time.

Brunswick County Public Hearing Comment Signup (December, 17, 2019)

Inlet Hazard Area Boundary Update & Rule Amendments (15A NCAC 07H.0304, .0309 & .0310)

NAME	AFFILIATION	EMAIL	PHONE
~~Timothy D Lewis~~	~~FOHB~~	~~1221timothy@gmail.com~~	~~910 575 4501~~
* Jay Holden		holden3@ec.rr.com	846-3193
✓ Vicki Myers		vlymyers@gmail.com	704.577.4280
* MIKE SULLIVAN		SULLIVAN@GMAIL.COM	
✓ TOM MYERS	MBPOA	TMMYERS@ATMC.NET	704-905-6208
✓ TIM	Town of HB		

* INDICATES decided to not comment – will send written comments

New Hanover County

Public Hearing held on Tuesday, December 17, 2019 at 3:00 PM, at the New Hanover County Government Center (230 Government Center Drive, Wilmington, NC 28403)

DCM Staff Attendees:
Ken Richardson

Coastal Resource Commissioner Attendees:
Renee Cahoon (CRC Chair)

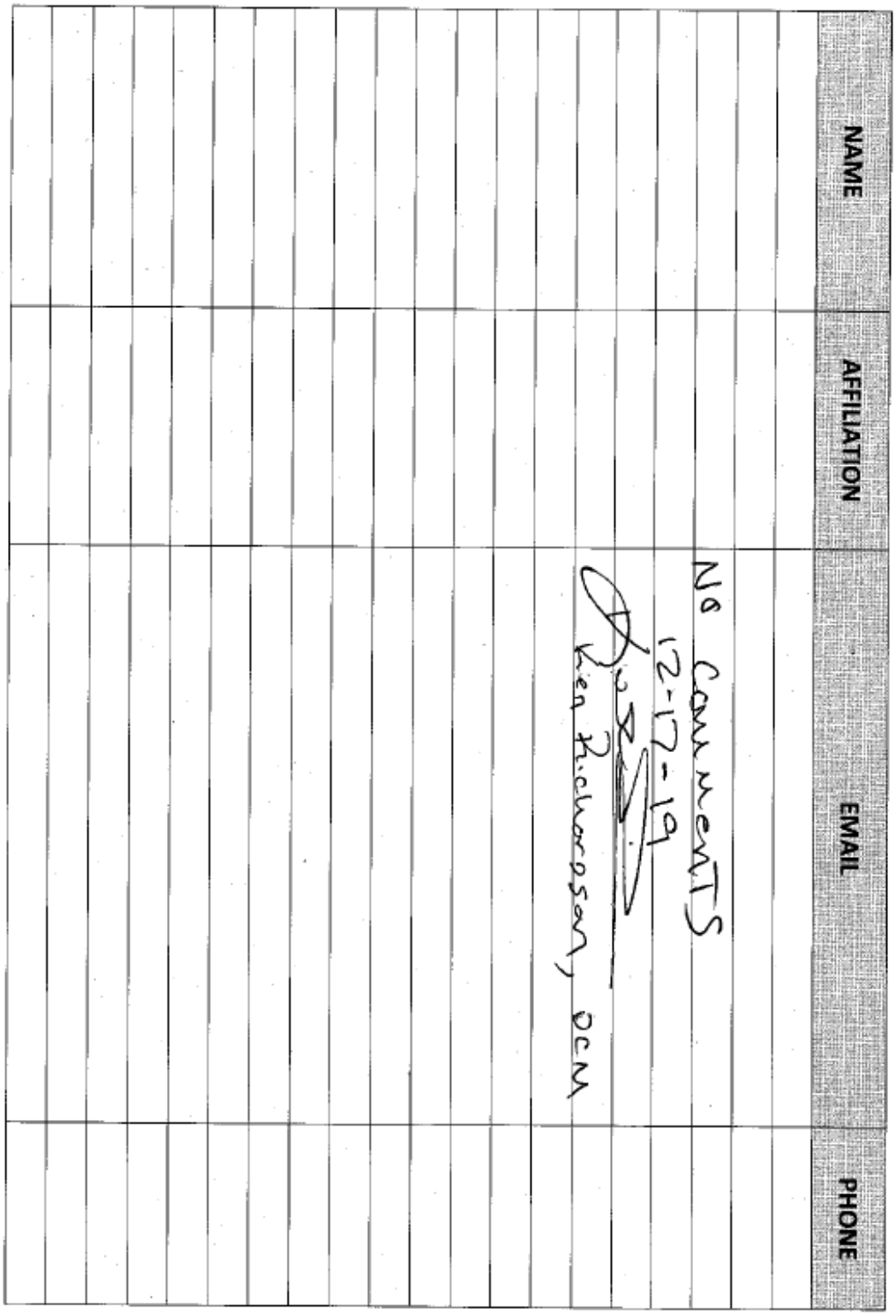
Public Comments:

Although the public hearing was attended by 10-15, no one signed up provide verbal comments.

New Hanover County Post-Public Hearing Questions and Informal Concerns:

Immediately following the public hearing, Staff were available to take questions that were based on efforts to better understand the mapping methodology and proposed rule amendments. For the purposes of this summary, "informal concerns" are those expressed by attendees who chose not to sign up to speak. The following are summaries of those questions:

- Several questions were asked about the CRC's intent to "grandfather" structures inside the proposed IHAs: 1) would existing structures greater than 5,000 square feet, that cannot meet setback requirements, be allowed to rebuild if damaged more than 50% of the structure appraised value? 2) would large structures (greater than 5,000 square feet) that can meet setback requirements be allowed to rebuild?
- It was noticed that the proposed erosion rate setback factors using inlet erosion rates are lower than both the current setback factors and the 2019 proposed oceanfront update setback factors – so the question was asked, why?
- Can the pier at the north end of Carolina Beach be rebuilt since it would be inside the proposed IHA?



New Hanover County Public Hearing Comment Signup (December, 17, 2019)
Inlet Hazard Area Boundary Update & Rule Amendments (15A NCAC 07H.0304, .0309 & .0310)

NAME	AFFILIATION	EMAIL	PHONE
		No comments 12-17-19	
		Ken Richardson, DCM	

Onslow County

Public Hearing held on Tuesday, December 18, 2019 at 10:00 AM, at the Sneads Ferry Library (1330 Highway 210, Sneads Ferry, NC 28460)

DCM Staff Attendees:
Ken Richardson

Coastal Resource Commissioner Attendees:
None

Public Comments:

Mike Benson (mike.bensonntb@gmail.com, 919-889-8537): is a resident of North Topsail Beach and serves as a Town Alderman: Mentioned that the Town of North Topsail Beach is currently still considering the full impacts of the proposed updated IHA boundary and rule amendments, and noted that the Town Manager could not attend this public hearing due to scheduled meeting with FEMA (not related to IHAs). He understands and appreciates the CRC's efforts and challenges that come with doing their job, but wants the CRC to also consider the Town's concerns. The following are initial concerns, but mentioned that the Town would also submit them in writing once they've had more time to discuss potential issues:

- There would be hardships for property owners to endure should the proposed IHA and rule amendment were to go into effect.
- Suggests that the alongshore boundary should have been selected at approximately transect #1379 instead of transect #1345 given that transect #1379 (approximately) is where erosion rates start to go above 2 feet per year approaching the inlet (New River Inlet). Suggests that area between those transects should be excluded from the proposed IHAs.
- Would prefer to see the condos (Topsail Reef) remain in the Ocean Erodible Area and not the Inlet Hazard Area because they serve as affordable housing. Is concerned that because these structures exceed the 5,000 square feet limit and cannot meet the setback requirement, that the rules would not allow them to be rebuilt.
- Suggested that the CRC consider additional clarification on new development on vacant lots.
- The CRC needs to consider how this boundary update and rule amendments would impact Federal assistance following natural disasters. Could FEMA deny recovery assistance funds based on whether or not property is in or out of the State's proposed IHAs.
- Asked why structures are being limited to 5,000 square feet? Why is 5,000 square feet significant?

Fred Burns (baycatdaddy@hotmail.com, 803-606-5612): is a North Topsail Beach property owner. Owns multiple properties adjacent to the inlet (2364, 2376, & 2378 New River Inlet Drive, North Topsail Beach). Does not like the proposed updated boundary and rule amendments.

- Mother Nature dictates erosion and is subject to change; however, suggests that erosion rates have not been updated approximately every five years as stated by DCM Staff.
- Suggests that dredging the inlet (New River Inlet), or "inlet mining" has created the accelerated erosion problem at North Topsail Beach; starting at Topsail Reef condos and going towards the inlet.
- Suggests that if 2013 data were used, that it should not because the erosion problem is a manmade hazard and should be considered artificial, and should not influence the areas proposed IHA or erosion rates.
- Current the erosion rate setback factor is 2, which makes 60 feet the minimum setback distance. The proposed IHA setback factors would make much of the area undevelopable due the higher setback requirements that are greater than 2.
- The CRC should consider changing the pre- and post-plat dates (June 1, 1979) in their rules – maybe later in the 1980s, to allow property owners to build based on setback factors in place at the time a lot was platted if they cannot meet the current setback factor.
- Currently, his property/properties has a dune (approximately 14 feet high), and can build under current rules. If new rules prevent development of his property, then a "takings claim" could be considered.
- Stated that that currently, the USACE has approval to use a dredge disposal area, and that they no longer put sand on the beach. (Is this an issue related to the Coastal Barrier Resource Act (CBRA)?)
- Supports the use of a terminal groin instead of the existing sandbag structures along the shoreline at New River Inlet, and stated that the CRC limits what property owners can do to protect their homes and beaches.
- Estimates that the beach in front of his home is accreting up to 5 feet per year, and hopes this continues, and hopeful that this would influence the IHA boundary and setback requirements.
- Suggested that the CRC take manmade factors out of consideration when analyzing and mapping the boundary (IHA).
- Asked if he is not able to build under the new inlet erosion rate setback requirements, how long would it take before he can build?

Bill McLaughlin (nhmrm@netzero.com, 352-528-5939): is a property owner on New River Inlet Road (last house before the river) in North Topsail Beach.

- Claims that the USACE caused the erosion problem when they dredge the inlet.
- Supports the construction of a terminal groin over a navigational jetty. However, he referenced how well they work based on his observation of a jetty in a northern state (New Hampshire?).

- Thought that at one time a "jetty" had been approved at New River Inlet and asked what happened and why it hasn't been constructed?
- Suggested that since the erosion problem was caused by a government agency, why does the government not correct (or fix) the problem. Claimed that when President Donald Trump visited the area after storm (Hurricane Florence, 2018?), that he was concerned about how money was being spent on current attempts to prevent erosion.

Kevin Finger (707-688-1213): is a North Topsail Beach resident. Stated that most of his concerns had been expressed by others. Suggested that aerial photos don't lie, and would show the manmade influences (erosion) that the dredging New River Inlet has had on the adjacent shoreline and property owners.

Mark Barefoot (252-469-6194): Signed up to provide public comments, but decided to postpone comments, or either his points were already expressed by others.

John Workman (johnworkman@seacoastrealty.com): signed up to provide public comments, but opted not to at that time.

Jenna Morton (jennamorton@seacoastrealty.com, 910-389-8932): is a realtor. Suggested that the CRC needs to be aware of the impacts associated with the proposed IHA boundary and rule amendments. Specifically, the impacts that higher erosion rate setback factors will have on those property owners who are affected.

- Asks is there a way to move forward with the least amount of impacts?
- From a realtor's prospective, disclosure that a property is in the IHA would influence property value.
- Asks if the CRC would consider moving the deadline for public comments to allow more time for comments.

Maggie Smith (540-538-5727): is a realtor. Signed up to provide public comments, but opted not to at that time.

Melissa Ziegler (loveshackprop@gmail.com, 910-538-5807) is a North Topsail Beach property owner. Bought home in February/March 2019.

- Suggests that the CRC should consider and allow something other than sandbags under the house to protect structures (like boulders).
- Having to rebuild sandbags is a constant problem and not a good look to have sandbags everywhere; especially those that are damaged and torn.

Bill Sinclair (oneshot3457@gmail.com, 919-437-3203) is a North Topsail Beach property owner. Signed up to provide public comments, but was not available to comment.

Onslow County Post-Public Hearing Questions and Informal Concerns:

- Suggestion was made that the CRC should consider the number of residents affected by the proposal, rather than the number of structures. In the discussion, there was a claim that with the condos alone that there would be 500 (or more) residents impacted. (includes Topsail Reef and St. Regis)
- Question was asked if IHA rules would have an impact on the parking lot at New River Inlet?

Onslow County Public Hearing Comment Signup (December, 18, 2019)

Inlet Hazard Area Boundary Update & Rule Amendments (15A NCAC 07H.0304, .0309 & .0310)

NAME	AFFILIATION	EMAIL	PHONE
Mike Benson	N. Topsail Beach Town Alderman	mike.bensonntb@gmail.com	919 889 8537
FRED BURNS	N. TOPSAIL	baycatdaddy@hotmail.com	8036065612
BILL MCLAUGHLIN	N TOPSAIL	NTHMRM@NETZERO.352	528 5939
KEVIN FINGER	" "		707-688-1213
* MARK BAREFOOT	"		252-469-6194
* John Workman	Realtor	John Workman @ Seacoast realty. Com	
Jenna Morton	realtor	Jenna Morton @ seacoast realty.com	9105898937
* Marcia Smith	REALTOR	[redacted]	540 538 5727
Melissa Ziegler	N. Topsail Owner	Loveshackprop@gmail.com	910-538-5827
* BILL SINCLAIR	owner	oneshot3457@gmail.com	9194373207
~~Jill Pittman~~	~~realtor~~	~~jill@starfishrealtyinc.com~~	~~919 452 6084~~

* INDICATES DECIDED NOT to Comment - Concerns already Mentioned or will email comments

Pender County

Public Hearing held on Tuesday, December 18, 2019 at 3:00 PM, at the Assembly Building (720 Channel Blvd., Topsail Beach, NC 28445)

DCM Staff Attendees:
Ken Richardson

Coastal Resource Commissioner Attendees:
None

Public Comments:

Frank Braxton (fbraxton@cldeng.com. 910-520-3347): is a Topsail Beach property owner. Asks what is the basis for including the area around the canals inside the proposed Inlet Hazard Area (at New Topsail Inlet on Topsail Beach)? (area is question is at Godwin Ave., McLeod Ave., Boryk Ave., and Trout Ave., Topsail Beach). Suggests that except for maybe Hurricane Bertha (1996), there has never been an erosion problem at this location, and added that if erosion is a problem, why are building permits issued?

Steve Smith (stevesmith@topsailbeach.org, 910-547-2677): is the Mayor of Topsail Beach, and a property owner.

- Asked if the CRC had given any additional thoughts to changing the 2009 grandfathering date (August 11, 2009) given that there are more structures built after 2009.
- Generally, agrees with the fundamental methodology used by the Science Panel to map the proposed IHAs, but doesn't understand why the area adjacent to the canals was incorporated into the boundary (at New Topsail Inlet on Topsail Beach). (area in question is at Godwin Ave., McLeod Ave., Boryk Ave., and Trout Ave., Topsail Beach).
- Stated that dunes that have been lost on the Oceanside was due to hurricanes, and not inlet specific erosion, and recommended that the proposed boundary at Topsail Inlet on Topsail Beach be reviewed.

Pender County Post-Public Hearing Questions and Informal Concerns:
General questions were asked about current rules. More questions were asked about the methodology used by the Science Panel to map the IHA boundary at New Topsail Inlet at Topsail Beach. This side of the inlet is accreting, and instead of using the "90-Year Risk Line" to map the landward boundary, the Science Panel extended the boundary away from the inlet to include the area adjacent to the canals.

Pender County Public Hearing Comment Signup (December, 18, 2019)

Inlet Hazard Area Boundary Update & Rule Amendments (15A NCAC 07H.0304, .0309 & .0310)

NAME	AFFILIATION	EMAIL	PHONE
Frank Braxton	Property Owner	fbraxton@CLDeng.com	910.520-3347
Steve Smith	Topsail Beach	SteveSmith@topsailbeach.org	910-547-2677
Tammy Proctor	Pender County Tourism / NCBIWA	tproctor@pendercountync.gov	

Carteret County

Public Hearing held on Tuesday, January 7, 2020 at 3:00 PM, at NCDCM HQ (400 Commerce Avenue, Morehead City, NC 28557)

DCM Staff Attendees:

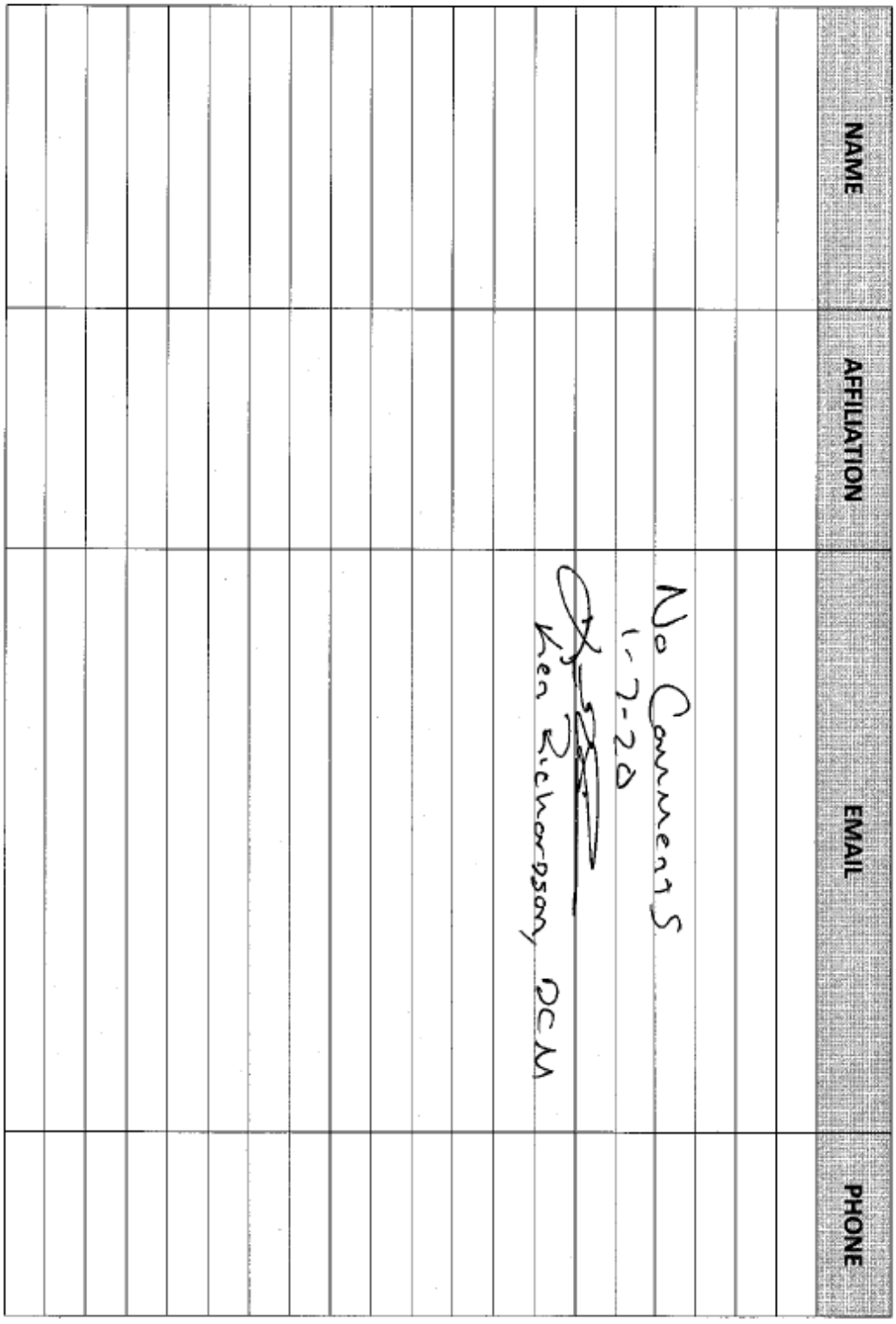
Ken Richardson
Tancred Miller
Mike Lopazanski
Angela Willis
Daniel Govoni

Coastal Resource Commissioner Attendees:

None

Public Comments:

None



Carteret County Public Hearing Comment Signup (January 7, 2020)

Inlet Hazard Area Boundary Update & Rule Amendments (15A NCAC 07H.0304, .0309 & .0310)

NAME	AFFILIATION	EMAIL	PHONE
		No Comments 1-7-20	
		Ken Richardson, DCM	

Hyde County

Public Hearing held on Wednesday, January 8, 2020 at 10:00 AM, at the Community Center – Multipurpose Room (30 Oyster Creek Road, Swan Quarter, NC 27885) & broadcast simultaneously to Ocracoke Island at Ocracoke Community Center (999 Irvin Garrish Highway, Ocracoke, NC 27960)

DCM Staff Attendees:

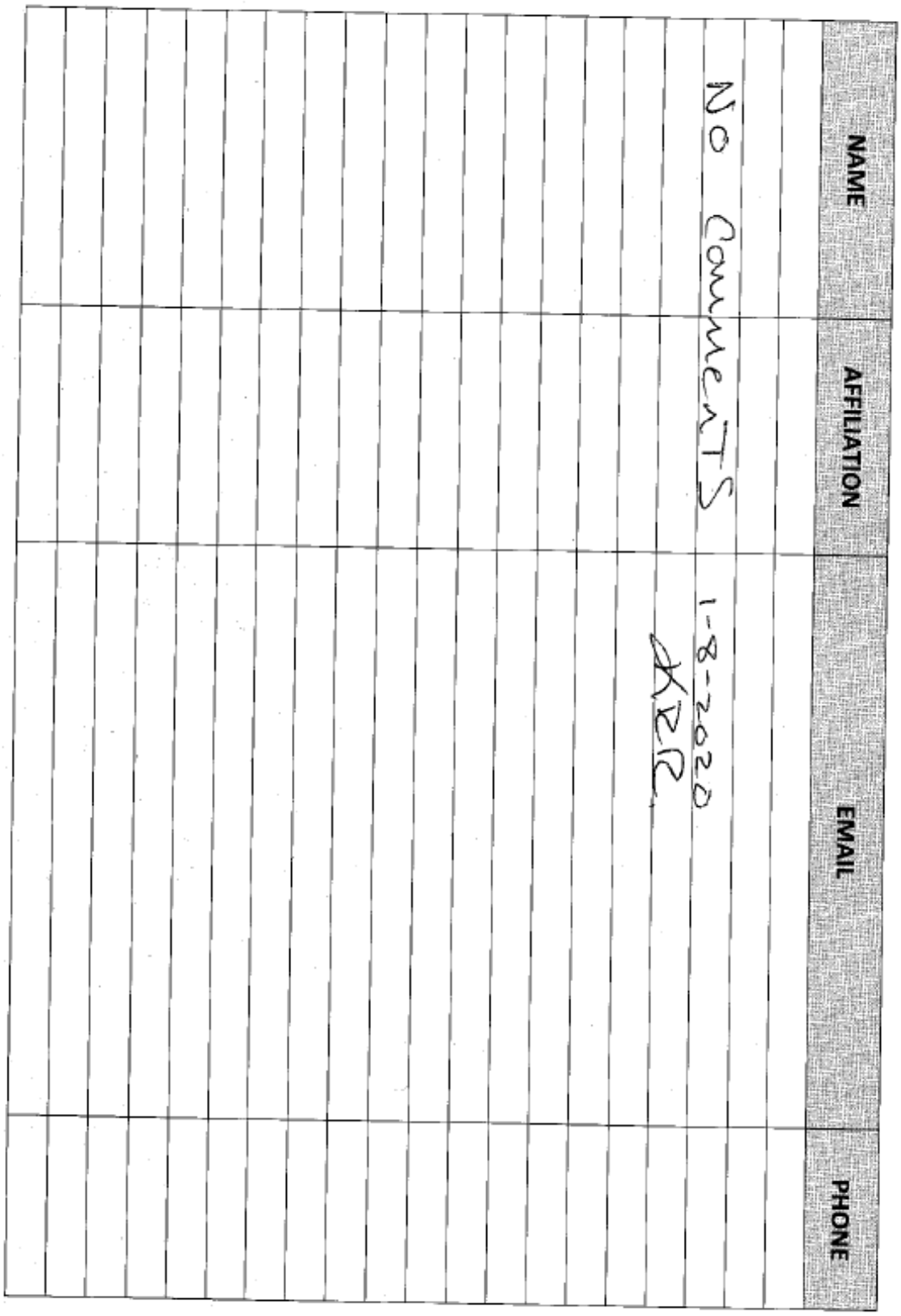
Ken Richardson
Tancred Miller
Angela Willis

Coastal Resource Commissioner Attendees:

None

Public Comments:

None



Hyde County Public Hearing Comment Signup (January 8, 2020)
Inlet Hazard Area Boundary Update & Rule Amendments (15A NCAC 07H.0304, .0309 & .0310)

NAME	AFFILIATION	EMAIL	PHONE
No Comments		1-8-2020	

Dare County

Public Hearing held on Tuesday, January 14, 2020 at 11:00 AM, at Town of Nags Head Board of Commissioners Room (5401 S. Croatan Highway, Nags Head, NC 27959)

DCM Staff Attendees:

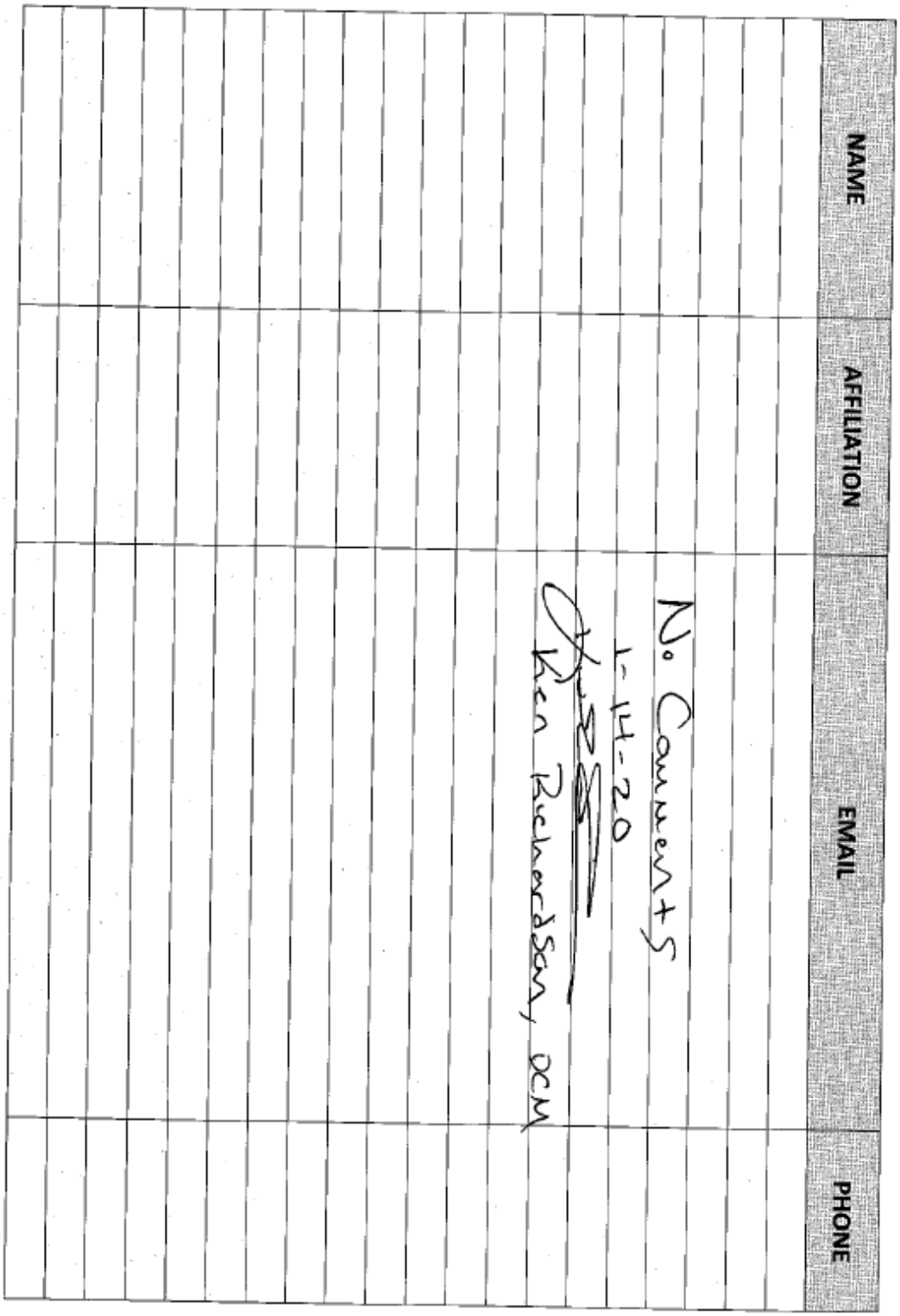
Ken Richardson
Tancred Miller

Coastal Resource Commissioner Attendees:

None

Public Comments:

None



Dare County Public Hearing Comment Signup (January 14, 2020)

Inlet Hazard Area Boundary Update & Rule Amendments (15A NCAC 07H.0304, .0309 & .0310)

NAME	AFFILIATION	EMAIL	PHONE
		No Comments	
		1-14-20	
		Ken Richardson, DCM	

2019 Proposed Inlet Hazard Area (IHA) Boundary Update & Rule Amendments: Public Comments (*written comments*)

Hearing Record: December 1, 2019 to March 2, 2020

Public Comments:

(received via email: 11/20/2019)

Holden Beach Property Owners Association
P.O. Box 376
Supply, North Carolina 28462

November 16, 2019

To: Building Inspector, Town of Holden Beach

The Holden Beach Property Owners Association (HBPOA) has been monitoring the proposed changes to the Inlet Hazard Area (IHA) boundaries on the east and west ends of our island. The proposed IHA will impact more than 200 property owners on the west end of our island by placing new restrictions on what they can build (or rebuild) on their property.

This is the highest number of structures in any IHA in the state, and adding this many properties to an IHA on our island will have a significant impact not just to the impacted property owners, but to our overall tax base as well. We don't understand the rationale behind this change, since the west end of Holden Beach has been continuously accreting for decades, as documented in surveys by the Town's engineer. The Inlet Hazard Area Method (IHAM) does not take any of this into account.

Ken Richardson reported at the NCBIWA conference that public hearings on the IHA changes will begin next month and comments will be closing at the end of January. We are trying to notify our impacted property owners so they can provide input, but there is no notice of the hearing on the Division of Coastal Management website, only scientific documents.

We need your help with informing our property owners. Given the significance of the changes to the IHA and the short timeframe for input occurring over the holidays, the HBPOA would like to conduct a public hearing or information session to inform our members about this significant potential impact to their property. Your assistance with conducting this session would be greatly appreciated.

Sincerely,

Thomas M. Myers

Tom Myers
HBPOA President

(received via email: 11/20/2019)

From: Brian [mailto:vccbrian@atmc.net]
Sent: Wednesday, November 20, 2019 9:16 AM
To: 'Braxton.Davis@ncdenr.gov' <Braxton.Davis@ncdenr.gov>
Cc: 'Planning and Inspections' <planninginspections@hbtownhall.com>
Subject: Inlet Hazard Area

Braxton,

My name is Brian Murdock, Commissioner elect for the Town of Holden Beach. I see you have scheduled a public hearing for December 17th concerning the possibility of extending, dramatically I might add, the limits of the Inlet Hazard Area. This would be devastating to our Town and to the residents that own property on the West end of our island. I would ask that you please move the scheduled public hearing to a more suitable date that more of our community would be able to be informed and attend. This is too close to Christmas when a good number of our homeowners are out of town for the holidays. I would also like to be provided the science behind this proposal as we haven't had any losses on that end of our island in over 50 years. What engineering firm or professionals came up with this? Will they be available to explain why this needs to happen? What other municipalities are being affected by this decision and to what extent? I just want some time so I can inform all residents that will be affected by what you (they) are attempting to do to their investments in our Town. Would you please consider this request so we can all show up to this hearing?

Brian Murdock

910-664-0126

(received via email: 12/15/2019)

From: Mary Hopkins <mhopkins418@gmail.com>
Sent: Sunday, December 15, 2019 1:25 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: [External] Holden Beach Property Owner

Hello,
I am a property owner at 995 Ocean Boulevard West, Holden Beach, NC. I have owned my house since 1974. I am contacting you concerning the recent upcoming changes to the Inlet Hazard Areas. Our property has seldom seen loss due to erosion. As a matter of fact, we have 8 beach steps from our boardwalk underground! They have been that way for at least 20 years. I am constantly amazed at the buildup and vegetation that has occurred over the several decades since we built this home. I am submitting this information and my opinion in hopes that you will not enact these proposed changes.
Thank you for listening.
Sincerely,
Mary Claire Kosterman
995 OBW
Holden Beach NC 28462

(received via email: 12/16/2019)

From: Beverly Compton <beverlycompton@atmc.net>
Sent: Monday, December 16, 2019 11:19 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: [External] IHA Holden Beach NC

As owners of 1317 Ocean Blvd West—built in 1988—and having made quite an investment there, my husband and I are quite concerned that the IHA proposals include our property as we are oceanfront but do have the equivalent of blocks from the ocean to our house. In our experience of the last 12 years we have seen continual accretion of the beach...southbound toward the ocean. Also we are situated perhaps a half mile from the Shallotte Inlet. There is a manmade (I've been told) berm just 3 houses to the west of us...even the road goes over the berm which we would expect to provide some protection. I suppose the marsh could fill and approach our house but in 12 years it hasn't and the original owners are unaware of that happening.

Perhaps we must trust the model your group is working from so I would like to know if models proposed and approved in the past have proven to be accurately predicting the eventual situation they

described. Surely you all are doing your very best. But once development has been permitted, surely the state would want to protect through extreme measures, the existing infrastructure that is such a joy for visitors and provides so much economic value to the local area, county and state.

It seems that the extension of the inlet areas on Holden Beach seem way too conservative in light of the history of the west end as well as the east end actually.

Anything has the *possibility* of happening—a continental shelf might slide away, a hurricane might deliver a 1954 Hurricane Hazel kind of storm and there might be the coming of the Lord when none of this will have relevance but it seems to us that the committee's proposals would be serious if they happen as predicted but what is the *probability* of such a circumstance actually happening.

The economic conditions are improving but properties are not back to 2007 values. If evaluation of our and other properties erode further because people *think* your conclusions are scientific and because of that, assume that the predictions have a *high probability of happening,* they might avoid investing here to the detriment of our tourism season and building of accommodation tax funds which could increase taxes for all property owners. If visitors hesitate and withdraw, they will miss the joy we feel as property owners on this particular island. Go slowly and please be sure there are no unintended consequences in implementing IHA revisions as proposed.

(received via email: 12/17/2019)

Dear Mr. Davis,

I am writing to voice my objections to the proposed expansion of the inlet hazard area at the west end of Holden Beach. For 35 years, I have owned property at 1045 Ocean Boulevard West, which would be included in the expanded hazard area. I purchased property in this section of the beach because it has consistently experienced shoreline accretion, demonstrated on several of the maps in your recent studies. I object to expanding the designated inlet hazard area to include properties that pose no risk, especially when there has been no migration of the Shallotte Inlet and this end of the island has shown consistent accretion, despite the lack of any beach renourishment efforts. The proposed IHA designation, for which there is a complete lack of evidence, will adversely affect the value of my property for no purpose. Please reconsider the expansion of the Holden Beach west end IHA and reduce it to the previous boundaries.

Bernard M Branson
Property Address: 1045 Ocean Boulevard West, Holden Beach, NC 28462
Mailing Address: 2175 Eldorado Drive NE, Atlanta, GA 30345
Brando Associates Brandoga@comcast.net

(received via email: 12/19/2019)

I read your recent report and recommendations on the Inlet Hazard Area for the Coastal Regions of North Carolina and I offer the following comments for your consideration:

1. The CRC Memo states that the Proposed IHA Rule Changes include provisions to GRANDFATHER ALL EXISTING STRUCTURES within the new IHA Rules as well as all lots under 15,000 square feet, platted after July 23, 1984 or before the effective date of Proposed IHA Rule Changes, with respect to density restrictions. However, there is no language in the Proposed IHA Rule Changes that expressly grandfather such lots or structures.

2. The Proposed IHA Rule Changes imply, to me any way, a causal connection between the size of the structure, the number of units in a structure, and/or the size of the lot and the risk of erosion, flooding and other adverse effects of sand, wind and/or water associated with dynamic ocean inlets. It is unclear to me as it has not been demonstrated and substantiated with hard data in the report how the size of a home, the number of units, and/or the size of the lot has any causal relationship to the risk of realizing hazards associated with dynamic ocean lets.

3. It is unclear the rationale and validity of establishing a generic, average minimal standard erosion rate and applying it with only minor adjustments. Specifically let's look at Holden Beach as an example where the minimal erosion rate of -2ft/yr was employed. Interestingly, the west end of Holden Beach has been and is accretional as stated in the report: "Since the late 1960's the ebb channel" of the Shallotte Inlet

"has generally been aligned in an SE-ESE direction, which has favored the accretion along the Holden Beach shoulder that has led to the bulbous shape of the western end of the island." Further in Figure 16 on page 34 of the North Carolina 2019 Oceanfront Setback Factors & Long-Term Average Annual Erosion Rate Update Study, the Report demonstrates the erosion rates on the west end of Holden Beach have ranged from +7ft to 0ft (accretion) per year SINCE 1944! So for well over 45 to 75 years the west end of Holden Beach has been accretional which calls into questions utilizing the generic, minimal standard of -2ft/yr as well as all the setback points and Hybrid-Vegetation Lines.

4. If a current existing structure and/or lot is unable to meet the rules (setback requirements, house size, etc.) as put forth in the report, the property would be offically considered nonconforming thereby negatively impacting property values, insurance rates and/or complicating potential sales and financing all based on an unproven relationship. This seems unfair to the property owners that previously complied with existing guidelines/rules only to have the rules changed causing their properties to now be judged nonconforming.

Personal Regards,
Dr Gordon
The Gordon 5 Properties LLC vgordon5@atmc.net

(received via email: 1/6/2020)

Mr Davis and Mr Richardson,

I am writing to express my concern at the proposed changes to the Inlet Hazard Area on the western end of Holden Beach. My wife and I have owned a property (1103 Ocean Blvd West, Holden Beach) that was previously not in the Hazard area, but will now be in the proposed Hazard area, for twenty years.

When we purchased our property we specifically selected a property towards the western end of Holden Beach because our research showed that the dunes to the ocean side of our oceanfront home were growing. In other parts of the island there was erosion, but on the western end the dunes were growing. Since the time we purchased our home in 2000 the dune between us and the beach has grown over 60 feet. Because we had this first hand experience that the dune was growing (accretion) my wife and I made the decision to build a new house on the property in 2018.

We are dismayed that you are proposing to redraw the inlet hazard area lines to include our house when the facts are clear - over a sustained period of time the dunes in front of our house are growing not eroding, and as a result, the risks for flooding and storm damage have decreased. In addition, the recently approved FEMA flood maps shows that our house went from 17 ft to 13 ft elevation requirement, reflecting a reduction in flood risk.

We appreciate the concerns about potential storms and appreciate the concerns about beach erosion, but we don't understand why our house, under the new inlet hazard area , is being assessed at a greater risk of erosion than ocean front houses further to the east when the facts show the opposite. The dunes in front of our house are growing not eroding - and have been doing so for many many years.

Your own data seems to confirm what we are saying. Your own erosion rates study shows an accretion of 2.2 ft per year over a sustained period of time (see extract from your data below).

Change Trend:	Accretion
Rate (ft/yr):	2.2
Location:	Holden Beach
Shoreline Date (early):	1/1/1944
Shoreline Date (2016):	1/31/2016, 7:00 PM

If our property is placed in this area we fear it will drastically impact our insurance rates and property values and ability to make improvements to our property. We simply don't understand why this change is being made.

Sincerely
--
Peter Corbett
1103 Ocean Blvd West
Holden Beach NC 28462
Peter Corbett petercorbett.atlanta@gmail.com

(received via email: 1/12/2020)

From: Connie Styers [mailto:conniehstyers@gmail.com]
Sent: Sunday, January 12, 2020 9:51 AM
To: ken.richardson.ncdenr.gov@gmail.com
Cc: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>; mayor@oibgov.com
Subject: [External] Comments Ocean Isle Beach NC Coastal Mgmt Workshop

I was in attendance at the Ocean Isle Beach Town Hall meeting January 9, 2020 to review the proposed Inlet Hazard Area boundary updates. I am requesting an ease of proposed restrictions due to a lack of studies over the past 40+/- year period. In the future, a specified time period should be adhered to effectively monitor the inlet hazard area boundary lines.

Connie H Styers
114 Shallotte Blvd
Ocean Isle Beach, NC 28469
Telephone 336-908-4250
Connie H Styers

(received via email: 1/13/2020)

Good afternoon. I wanted to express my opposition to the proposed changes to the Inlet Hazard Area boundaries and rules.
Our family owns an ocean front home at Holden Beach and have for 10 years. We are in the new proposed area. 5 years ago, the house next door burned and badly damaged our house and the one on the other side of it. We redid ours, but realize with the proposed changes we may not be fortunate with changes to be able to do again. The house on the other side of the house that burned was torn down. The owners have been trying to sell their lot. With proposed changes, they may be limited as to their options. Please consider homeowners, like us who had faced circumstances not our fault and how these changes could affect their properties.

Thank you for your consideration.

Carol Douglass Lowe
336-687-6298
Carol Lowe carollowe.coldwellbanker@yahoo.com

(received via email: 1/13/2020)

Braxton/Ken,

As a homeowner at Holden Beach and a NC tax payer with our permanent resident in Cornelius, NC we kindly ask that the Holden Beach Property Ownership Association resolution be honored in a good faith effort to address the HBPOA concerns.

There is apparent due diligence that needs to be addressed.

Thank you for honoring the HBPOA resolution.

Best Regards,

Richard M. Hester
President
Interdyne Corporation
Office 704-660-9172
Cell 704-408-3533
rhester@interdyne.com
www.interdyne.com

RESOLUTION IN OPPOSITION TO THE INLET HAZARD AREA (IHA) PROPOSAL BY THE NC COASTAL RESOURCES COMMISSION

LET IT BE KNOWN THAT:

WHEREAS, the Coastal Resources Commission (CRC) has proposed updated boundaries and rules related to the Inlet Hazard Area (IHA) on Holden Beach, North Carolina; and

WHEREAS, property owners in Holden Beach, North Carolina, would be negatively impacted by these proposed changes; and

WHEREAS, the economic and environmental health of the entire island would be negatively impacted by the new IHA restrictions, thus jeopardizing property values, the tax base, and island businesses; and

WHEREAS, the west end of Holden Beach has been accreting for the last fifty years, and this growth was not accounted for in the new IHA designation; and

WHEREAS, the new IHA will restrict the stated purpose of protecting life and property, since should it ever be necessary, nourishment of Holden Beach's western-most two and-a-half miles would be ruled out under the proposed new IHA regulations, restricting property owners' ability to protect their properties; and

WHEREAS, being in the proposed IHA would stigmatize properties as "high risk," negatively impacting existing home sales and new construction; and

WHEREAS, Public Notice was inadequate and the timing of Public Hearing sessions close to the holidays impacted property owners' ability to comment on the proposed changes; and

WHEREAS, the notice of the Public Hearings on the proposed changes is still not on the North Carolina Department of Environmental Quality's website listing for Public Notices and Hearings; and

WHEREAS, the Fiscal Analysis prepared by the CRC was inadequate and contained numerous material errors which impacted the public's ability to accurately comment and the State of North Carolina's ability to accurately assess the impact of these proposed changes; and

WHEREAS, the Inlet Hazard Area Method (IHAM) does not account for accreting beaches, but rather penalizes these beaches for natural accretion and/or nourishment of areas not in the proposed IHA; and

WHEREAS, the Science Panel of the CRC was charged with consulting with local experts but the Town of Holden Beach's shoreline engineer was never contacted; and

WHEREAS, the Scope of Work approved by the CRC for the Science Panel in July 2016 did not contain a directive to develop new construction rules and standards yet those are part of the recommended changes; and

WHEREAS, the proposed changes to IHAs were not evenly applied to all developed inlets in North Carolina and have a dramatically greater impact on Holden Beach than any other inlet in the state, including inlets that were specifically noted in the CRC analysis; and

WHEREAS, the result of the changes will be to direct building away from one of the safest parts of our island, which is opposite the purpose of IHAs; and

WHEREAS, the timeframe for approving these changes in February 2020 and implementing them a few months later appears to be unduly rushed with no apparent benefits resulting from these quick actions; and

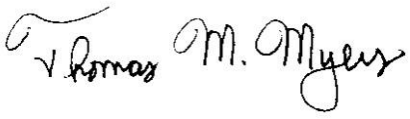
WHEREAS, The Holden Beach Property Owners Association (HBPOA) finds these new restrictions to be overly confusing and complicated with the impacts not clearly defined nor communicated in a timely way; and

WHEREAS, The HBPOA would like further education and discussion regarding the CRC's proposed boundaries and rules (e.g., proposed new Inlet Hazard Area setback rules, property size restrictions, and impacts on property owners' ability to develop their properties).

THEREFORE, BE IT RESOLVED, the Holden Beach Property Owners Association is opposed to the IHA changes and respectfully requests that the NC CRC reconsider the proposed IHA changes for Holden Beach.

BE IT FURTHER RESOLVED, the Holden Beach Property Owners Association respectfully requests a six-month extension of the comment period for the NC CRC IHA regulations, thus allowing us to perform educational sessions with experts to further inform and communicate with impacted property owners.

This the 10th day of January, 2020.



Thomas M. Myers, HBPOA President

(received via email: 1/13/2020)

From: Russell Marks [mailto:rrmarks1@verizon.net]
Sent: Monday, January 13, 2020 2:14 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: [External] IHA proposed changes on Holden Beach

My wife and I oppose the proposed IHA changes. They are not based on good science. They will be counterproductive. And they are being unfairly "fast-tracked for no apparent reason. That you for your consideration.

Kathryn and Russell Marks
138 Ocean Blvd.
Holden Beach NC

(received via email: 1/13/2020)

Gentlemen- in regards to the NC CRC IHA regulations, I oppose these changes as a homeowner within the new pending IHA parameters in the West End. My opposition is in alignment with the HB POA resolution in opposition to the IHA proposal:

- Property owners in Holden Beach, North Carolina, would be negatively impacted by these proposed changes; and WHEREAS, the economic and environmental health of the entire island would be negatively impacted by the new IHA restrictions, thus jeopardizing property values, the tax base, and island businesses;
- The west end of Holden Beach has been accreting for the last fifty years, and this growth was not accounted for in the new IHA designation
- The new IHA will restrict the stated purpose of protecting life and property, since should it ever be necessary, nourishment of Holden Beach's western-most two and-a-half miles would be ruled out under the proposed new IHA regulations, restricting property owners' ability to protect their properties
- Being in the proposed IHA would stigmatize properties as "high risk," negatively impacting existing home sales and new construction
- Public Notice was inadequate and the timing of Public Hearing sessions close to the holidays impacted property owners' ability to comment on the proposed changes
- The notice of the Public Hearings on the proposed changes is still not on the North Carolina Department of Environmental Quality's website listing for Public Notices and Hearings
- The Fiscal Analysis prepared by the CRC was inadequate and contained numerous material errors which impacted the public's ability to accurately comment and the State of North Carolina's ability to accurately assess the impact of these proposed changes; and
- The Inlet Hazard Area Method (IHAM) does not account for accreting beaches, but rather penalizes these beaches for natural accretion and/or nourishment of areas not in the proposed IHA
- The Science Panel of the CRC was charged with consulting with local experts but the Town of Holden Beach's shoreline engineer was never contacted
- The Scope of Work approved by the CRC for the Science Panel in July 2016 did not contain a directive to develop new construction rules and standards yet those are part of the recommended changes
- The proposed changes to IHAs were not evenly applied to all developed inlets in North Carolina and have a dramatically greater impact on Holden Beach than any other inlet in the state, including inlets that were specifically noted in the CRC analysis
- The result of the changes will be to direct building away from one of the safest parts of our island, which is opposite the purpose of IHAs
- The timeframe for approving these changes in February 2020 and implementing them a few months later appears to be unduly rushed with no apparent benefits resulting from these quick actions
- The Holden Beach Property Owners Association (HBPOA) finds these new restrictions to be overly confusing and complicated with the impacts not clearly defined nor communicated in a timely way; and WHEREAS, The HBPOA would like further education and discussion regarding the CRC's proposed boundaries and rules (e.g., proposed new Inlet Hazard Area setback rules, property size restrictions, and impacts on property owners' ability to develop their properties)

Again, as a homeowner in the West End of Holden Beach now within the proposed CRC IHA, I ask that the NC CRC reconsider the proposed IHA Changes for Holden Beach.

Respectfully,

Mark Werner
957 OBW
Werner, Mark (DX) mark.werner@dynexcapital.com

(received via email: 1/13/2020)

As stated below I would like to express my disapproval of the IHA Proposal:

WHEREAS, the Inlet Hazard Area Method (IHAM) does not account for accreting beaches, but rather penalizes these beaches for natural accretion and/or nourishment of areas not in the proposed IHA; and WHEREAS, the Science Panel of the CRC was charged with consulting with local experts but the Town of Holden Beach's shoreline engineer was never contacted; and WHEREAS, the Scope of Work approved by the CRC for the Science Panel in July2016 did not contain a directive to develop new construction rules and standards yet those are part of the recommended changes; and WHEREAS, the proposed changes to IHAs were not evenly applied to all developed inlets in North Carolina and have a dramatically greater impact on Holden Beach than any other inlet in the state, including inlets that were specifically noted in the CRC analysis; and WHEREAS, the result of the changes will be to direct building away from one of the safest parts of our island, which is opposite the purpose of IHAs; and WHEREAS, the timeframe for approving these changes in February 2020 and implementing them a few months later appears to be unduly rushed with no apparent benefits resulting from these quick actions; and WHEREAS, The Holden Beach Property Owners Association (HBPOA) finds these new restrictions to be overly confusing and complicated with the impacts not clearly defined nor communicated in a timely way; and WHEREAS, The HBPOA would like further education and discussion regarding the CRC's proposed boundaries and rules (e.g., proposed new Inlet Hazard Area setback rules, property size restrictions, and impacts on property owners' ability to develop their properties).THEREFORE, BE IT RESOLVED, the Holden Beach Property Owners Association is opposed to the IHA changes and respectfully requests that the NC CRC reconsider the proposed IHA changes for Holden Beach.BE IT FURTHER RESOLVED, the Holden Beach Property Owners Association respectfully requests a six-month extension of the comment period for the NC CRC IHA regulations, thus allowing us to perform educational sessions with experts to further inform and communicate with impacted property owners.

Patrick Albergo
Palbergo palbergo@aol.com

(received via email: 1/13/2020)

Dear Braxton and Ken,

The Holden Beach Property Owners Association (HBPOA) has passed the attached resolution in opposition to the proposed Inlet Hazard Areas (IHAs) on Holden Beach. The clauses in this resolution represent our concerns relative to the proposed IHAs. Please pass this information along to the Coastal Resources Commission as our formal written comments.

I will be attending the workshop on Thursday and would be glad to discuss the HBPOA's concerns with you at that time.

Best regards,
Tom Myers
President, HBPOA
Tom Myers tmmyers@atmc.net

RESOLUTION IN OPPOSITION TO THE INLET HAZARD AREA (IHA) PROPOSAL BY THE NC COASTAL RESOURCES COMMISSION

LET IT BE KNOWN THAT:

WHEREAS, the Coastal Resources Commission (CRC) has proposed updated boundaries and rules related to the Inlet Hazard Area (IHA) on Holden Beach, North Carolina; and

WHEREAS, property owners in Holden Beach, North Carolina, would be negatively impacted by these proposed changes; and

WHEREAS, the economic and environmental health of the entire island would be negatively impacted by the new IHA restrictions, thus jeopardizing property values, the tax base, and island businesses; and

WHEREAS, the west end of Holden Beach has been accreting for the last fifty years, and this growth was not accounted for in the new IHA designation; and

WHEREAS, the new IHA will restrict the stated purpose of protecting life and property, since should it ever be necessary, nourishment of Holden Beach's western-most two and-a-half miles would be ruled out under the proposed new IHA regulations, restricting property owners' ability to protect their properties; and

WHEREAS, being in the proposed IHA would stigmatize properties as "high risk," negatively impacting existing home sales and new construction; and

WHEREAS, Public Notice was inadequate and the timing of Public Hearing sessions close to the holidays impacted property owners' ability to comment on the proposed changes; and

WHEREAS, the notice of the Public Hearings on the proposed changes is still not on the North Carolina Department of Environmental Quality's website listing for Public Notices and Hearings; and

WHEREAS, the Fiscal Analysis prepared by the CRC was inadequate and contained numerous material errors which impacted the public's ability to accurately comment and the State of North Carolina's ability to accurately assess the impact of these proposed changes; and

WHEREAS, the Inlet Hazard Area Method (IHAM) does not account for accreting beaches, but rather penalizes these beaches for natural accretion and/or nourishment of areas not in the proposed IHA; and

WHEREAS, the Science Panel of the CRC was charged with consulting with local experts but the Town of Holden Beach's shoreline engineer was never contacted; and

WHEREAS, the Scope of Work approved by the CRC for the Science Panel in July 2016 did not contain a directive to develop new construction rules and standards yet those are part of the recommended changes; and

WHEREAS, the proposed changes to IHAs were not evenly applied to all developed inlets in North Carolina and have a dramatically greater impact on Holden Beach than any other inlet in the state, including inlets that were specifically noted in the CRC analysis; and

WHEREAS, the result of the changes will be to direct building away from one of the safest parts of our island, which is opposite the purpose of IHAs; and

WHEREAS, the timeframe for approving these changes in February 2020 and implementing them a few months later appears to be unduly rushed with no apparent benefits resulting from these quick actions; and

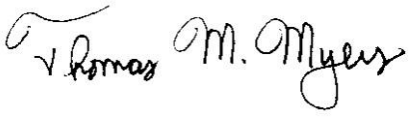
WHEREAS, The Holden Beach Property Owners Association (HBPOA) finds these new restrictions to be overly confusing and complicated with the impacts not clearly defined nor communicated in a timely way; and

WHEREAS, The HBPOA would like further education and discussion regarding the CRC's proposed boundaries and rules (e.g., proposed new Inlet Hazard Area setback rules, property size restrictions, and impacts on property owners' ability to develop their properties).

THEREFORE, BE IT RESOLVED, the Holden Beach Property Owners Association is opposed to the IHA changes and respectfully requests that the NC CRC reconsider the proposed IHA changes for Holden Beach.

BE IT FURTHER RESOLVED, the Holden Beach Property Owners Association respectfully requests a six-month extension of the comment period for the NC CRC IHA regulations, thus allowing us to perform educational sessions with experts to further inform and communicate with impacted property owners.

This the 10th day of January, 2020.



Thomas M. Myers, HBPOA President

(received via email: 1/13/2020)

January 13, 2020

Ken Richardson
Shoreline Management Specialist
State of North Carolina
Division of Costal Management
400 Commerce Avenue
Morehead City, NC 28557

Dear Ken,

I want to thank you for coming to Ocean Isle and conducting the workshop last Thursday (1/9) morning. I attended this workshop and was impressed with how much work went into this new IHA analysis.

I own a home on the east end of the island and I'm certainly impacted by the new proposed set back line. My address is 463 East Fourth Street and I am currently 160 feet back from the current set back line. Unfortunately, the proposed set back line now has my home within this new hazard area.

My home was built in 2014 and while it currently meets the existing setback requirements, it would not qualify for the grandfather clause outlined in the rules amendment of homes built prior to 2009. What concerns me about this IHA update and rules amendments homes across the street that are covered by the "grandfathering" rule (built prior to 8/11/2009) are closer to the current set back line. In addition, my home is built significantly higher and better as it was built to a much better and newer building code.

Just over 4 years ago, my wife and I purchased this beautiful home and was told by the township and the realtor it was re-buildable. I am now faced with the realization that if a fire and/or storm impacts my home with 50% damage, my home is not buildable. How does a state and community plot a lot and then tell the homeowner a few years later they can't rebuild? After decades have passed, how is it now the homeowner's fault? This could create a devastating financial impact on almost any family, including mine!

I am writing this letter to you to express my concerns and request serious consideration for my property to be included in the grandfather rule or exception.

Thanks so much for your consideration

Mike Druschel
463 East Fourth Street
Ocean Isle Beach, NC
Phone: 412/576-5932
Email: michael.s.druschel@gmail.com

(received via email: 1/14/2020)

Mr. Richardson,

I am writing you today to discuss the new IHA areas proposed by the NCDNR. While I fully understand the need to restrict new development in our natural areas, I also understand the economic impact that some of these decisions will have. I myself have been through a terrible ordeal with the new federal guidelines with regards to changing the flood plains and rezoning of the coastal areas. I feel there must be a way to provide a solution to the need to protect the inlet areas without the negative impact on existing home owners. Our coastal regions depend heavily on the tourist industry to survive and this is the type of legislation that can have a tremendous negative impact on this industry now and for years to come. When the government got involved with fishing regulations they all but wiped out our commercial fishing industry leaving the door open to other countries to come and rape our fish stocks and then sell them back to us at a profit. This battle is still being fought but I feel the war is already lost. Please reconsider the new area proposal further and perhaps discuss this issue with the local people that it will affect the most to see there could be a solution that benefits all.

Thank you for your time.

Sincerely
Chip Wilson
Wilson, Chip (ENSER) chip.wilson@enser.com

Chip Wilson

Regional Manager

ENSER Corporation

p (704) 588-8686 x413

m (803) 323-8217

e chip.wilson@enser.com

w www.enser.com

View Our Line Card

Engineering | Fabrication | Staffing

(received via email: 1/13/2020)

From: Anne Arnold [mailto:annearnoldhb@gmail.com]
Sent: Monday, January 13, 2020 3:16 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: [External] Pending IHA Map Impacting Holden Beach

- I have owned property on Holden Beach Island since 1969.
- I have been a permanent resident since 1986.
- My concerns are as follows, the same as those adequately stated by our Property Owners Association and I express my concerns for my clients who will feel this impact:
- "We have never lost a structure on the western part of the island – ever.
- The western part of the island has been accretional for recorded history. It has never been nourished.
- The geology and morphology of the island clearly show that the Shallotte inlet is not migrating east.
- Our Town's beach engineer has detailed annual surveys of the island going back over 20 years which show the inlet is stable and the beach is accretional – but neither the Town nor our engineer were ever contacted for input.
- Some of the areas proposed to be included in the IHA are in "X" zones. LiDAR surveys used for FEMA flood maps offer detailed and highly accurate information, but were not included"

I strongly object to the Holden Beach pending IHA Map and the impact it will have, if adopted, on the ownership of property on Holden Beach Island, both in the IHA and outside the IHA, as the impact will carry a stigma, affecting resale and tax value.

Anne Arnold

Anne Arnold, ABR, CRB, CRS, GRI
PROACTIVE Real Estate
3369 Holden Beach Rd SW
Holden Beach, NC 28462

Email: AnneArnoldHB@gmail.com
Direct: 910-367-1202 (cell)
Website: annearnold.com
Zillow: www.zillow.com/profile/AnneArnoldHBNC/

(received via email: 1/17/2020)

NORTH CAROLINA SEA GRANT

EXTENSION PROGRAM

5600 Marvin Moss Lane **Telephone: 910/962-2491**

Wilmington, N.C. 28409 **rogerssp@uncw.edu**

To: Renee Cahoon, Chair, Coastal Resources Commission
Braxton Davis, Director, NC Division of Coastal Management
From: Spencer Rogers Coastal Construction and Erosion Specialist, North Carolina Sea Grant
Date: January 16, 2020
Subject: Proposed Inlet Hazard Area rules

As a member of the Coastal Resources Advisory Council, I have reviewed the proposed Inlet Hazard Area rules, maps and erosion rates. I attended the public hearings in Brunswick and New Hanover Counties on December 17, 2019. My comments on the proposed IHA rules follow.

Erosion Rate Blocking Underestimates Inlet Erosion Rates

The most serious problem with the proposed rules is the way that shoreline erosion rate transects are blocked to established shoreline segments with similar erosion rates. Those rates are then used to determine vegetation line building setback delineations. The proposed method severely underestimates the inlet erosion rates.

Ocean Erodible Area (OEA) setbacks are based on running averages, which are used to smooth the differences between rates of nearby transects. The results are combined into shoreline segments with similar rates, or "blocked." The procedure is appropriate and effective because the transects are roughly parallel, and the erosion rates are relatively similar. However, radial transects are used to calculate erosion rates in the proposed IHAs, which wrap around the inlet shoreline at much different angles. When the running average includes the lower oceanfront change rates with part or all of the inlet shoreline, the historical changes on the inlet shoreline can be severely underreported. It is common for eroding inlet shorelines to have at least temporary accretion on one side of the inlet. The worst distortions in the proposed erosion rates and setbacks are located on migrating inlets adjacent to accreting oceanfront shoreline caused by the inlet.

Tubbs Inlet is a primary example. Both inlet shorelines are blocked to have erosion rates of 2 feet/year for setback purposes. Between 1994 and 2014, the Ocean Isle Beach inlet shoreline eroded at a rate of 25 feet/year. During that time period 10 new houses were constructed adjacent to the inlet. The CRC later approved an oversized sandbag revetment variance to protect

the end house, which at the time of the last maintenance had scoured to a depth of 13 feet below mean sea level on the inlet shoreline. Between 2009 and 2014, the Sunset Beach inlet shoreline eroded 1,000 feet, or 200 feet/year. Fortunately, most of the lost land was undeveloped. These numbers are approximate. The DCM can provide more accurate numbers.

Most of the proposed inlet shoreline erosion rates have segments where the running average blocking significantly underreports the historical erosion rates, though to a lesser extreme than near Tubbs Inlet. The distorted erosion rates appear unavoidable if the running averages are applied and used for vegetation-line referenced setbacks. It may be possible to delete some of the radial transects from the running averages to better represent the separate erosion rates on the inlet and on oceanfront shoreline near the inlet. However, the problem is one of several reasons that the Science Panel on Coastal Hazards concluded in Inlet Hazard Area Boundary, 2019 Update (IHA Report) that, "A primary finding of this report is that the vegetation line is not a reliable reference feature for certain management purposes near inlets."

Building Size Limit

A common criticism in the public hearings attended was the IHA-wide building size limit of 5,000 square feet {7H .309(a)(4)}. The methods described in the IHA Report to define the IHA boundary were intended to be as similar as possible to the Ocean Erodible Area (OEA), with added considerations for the wider shoreline oscillations common to inlets. The OEA boundary is defined as 90 times the erosion rate, inside of which building size is limited to less than 100,000 square feet. Smaller buildings may be constructed farther seaward with graduated setback requirements, reducing to 5,000 square feet at 30 times the erosion rate. The IHA Report based the landward boundary of the IHA, in most cases, on the 90-Year Risk Line, with a few exceptions. The 30-Year Risk Line was intended to be similar to the minimum OEA setback for 5,000 square foot buildings. The Science Panel's recommendations anticipated buildings larger than 5,000 square feet in at least parts of the recommended IHAs.

The proposed IHA size limit is applied to all "structures" but appears to be intended to be applied to buildings. Structures would include parking lots, roads and bridge size limits. Is that the intent?

Grandfathering Date

Another common comment in the public hearings was the restriction placed on the replacement of buildings larger than 5,000 square feet.

Grandfathering provisions are commonly implemented to allow the reconstruction of presently noncompliant buildings that were originally in compliance with required management practices at the time of construction. Under the present rules, buildings larger than 5,000 square feet have been legally constructed inside and outside of the present IHAs. Under the proposed IHA rules, those legally constructed buildings would be prohibited from replacement. The present

grandfathering provisions for replacement of existing "single family or duplex residential structures" larger than 5,000 square feet is addressed in 7H .0306(a)(5)(L) and is limited to buildings constructed prior to August 11, 2009. As I recall, the date stems from the adoption date of the graduated building setback requirements described elsewhere in (5).

Presumably, any existing larger buildings that were constructed after that date were in full setback-based size compliance at the time of construction. To address the public comments and treat buildings in the proposed IHAs equally with those buildings elsewhere in the Ocean Hazard Areas, the date could be changed to the effective date of the proposed IHA rules. Grandfathered building replacement would still be limited to 10,000 square feet in (L), and other reconstruction limits would apply. CRC-18-24 indicates that the revision would potentially apply to 41 existing larger buildings.

IHA Definition

The proposed Inlet Hazard Areas are defined in 7H .0304(2), which includes exceptions for (a) inlets closed for 15 years; (b) inlets that have migrated out of the IHA; and (c) State Port shorelines.

Deletion of the exceptions is recommended, rather simply defining the IHA as described in the IHA Report.

Closure of an inlet for 15 years does not necessarily make it unlikely to reopen. Inlet migration could conceivably move the inlet outside the IHA boundary, but that would not mean that the IHA near the inlet was outside its influence. Both issues would be best addressed in more detail with the recommended 5-year reassessments of all the IHAs. State Port Inlet Management Areas are pending approval as a separately defined Area of Environmental Concern within the Ocean Hazard Area. The areas are not included in the IHA Report and therefore do not require an exception.

Dune Prohibition

When the IHAs were adopted in 1979 it was believed that dune construction near the inlets might give a false sense of security for new development. Dune construction was therefore prohibited in 7H .0308(b)(5).

As indicated by the IHA boundaries, dunes offer little or no protection for inlet migration or inlet-induced shoreline oscillations. However, dunes provide significant protection during hurricanes and other extreme storms, a hazard the IHAs share with the rest of the Ocean Hazard Area. Dune protection is therefore a desirable practice for storm protection that should be encouraged within the IHA, rather than prohibited.

Deletion of the prohibition on dune construction in the IHA is recommended.

The proposed IHAs extend farther from the inlet than the present boundaries to include shorter-duration inlet oscillations. The impact of the dune building prohibition will have wider adverse impact on storm protection than under the present, smaller IHAs. In several cases the IHA applies to the entire island, which would prohibit dune construction anywhere on the island.

Required Lot Size

It is proposed to continue the present density limits in the renumbered 7H .0310(a)(3), limiting structures to one unit per 15,000 square feet of land area subdivided after July 23, 1981.

The public hearing presentation indicated that the section is now interpreted to limit density to one unit on later-subdivided, smaller lots. That is a useful density limit in the high-risk IHA but is not the original intent of the section.

In 1981 the intent was to address new subdivisions in previously undeveloped land near the inlets. It was not intended to encourage one unit per lot but rather to encourage multiple units and multiple-unit developments to be set back larger distances on shared ownership. A one-unit limit per lot would encourage new subdivisions to use the minimum size for all new lots, forcing some buildings much closer to the inlet than possible with shared property.

I recommend that the proposed rule be revised to address both purposes, with a revised application date. Because the proposed rules also limit building size to 5,000 square feet, it is not clear how to avoid multiple small lots for new subdivisions. It is one reason to consider larger buildings in the IHA.

Beach Bulldozing

Beach bulldozing appears to be allowed in the IHA in 7H .0308(a)(4). However, the General Permit for beach bulldozing excludes its use in the IHA. With the longer oceanfront shorelines proposed for IHAs, in some cases entire islands, is it still intended to prohibit use of the General Permit for beach bulldozing?

7H .0310 (a)(2)

The purpose of the proposed rule addition is not clear but refers to 7H .0606(5). Depending on the purpose of the rule, the proper reference appears to be to either 7H .0605(a)(5), the OHA building size limits; .0605(a), the OHA setback requirements; or .0605, the general use standards for OHAs.

Please contact me if there are questions about my comments.
Rogers, Spencer rogerssp@uncw.edu

(Received via email: 1/20/2020)

IHA Workshop, Ken asked for community input
Sent copy to Timbo at Town of Holden Beach

CRC's Science Panel on Coastal Hazards used methodology which involve possibilities, not certainties.
They seem convinced that the west end will have serious erosion issues that are influenced by the inlet
The IHA is based on the worst-case scenario
One has to ask: What is happening in the inlet, other than that OIB is building a terminal groin there?

Are they saying that the OIB terminal groin at the Shallotte Inlet is seen as potentially having negative effects on the west end of Holden Beach?

01/20
Lou Cutajar
Holden Beach
Louis Cutajar hbpoin@ec.rr.com

(Received via email: 1/21/2020)

-----Original Message-----
From: Marilyn Edwards [mailto:marilyne1978@gmail.com]
Sent: Tuesday, January 21, 2020 9:33 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: [External] Holden Beach West End

We have built and owned 1293 OBW for over 20 years and have never had any flooding. In fact a second set of dunes have built up over these years, quite beyond our steps that used to go down to the beach. The sand has built up so much that our 12 steps down to the beach are now 3 or 4. The house is more secure now than when it was originally built. Thank you, Marilyn Edwards

---

(received via email: 1/23/2020)

Mr. Richardson:

Thank you for this opportunity to share concerns about the proposed changes to Inlet Hazard Areas and the potential negative impact on Holden Beach. I am writing on behalf of my wife, Cheryl Hetzel, and myself. We have lived full-time on Holden Beach since May 2019 and have owned a home on the island since 2009 following years of visits.

First, we want to say that we recognize and respect the importance of the commission's work, especially in a world where environmental events are growing more volatile. However, the pending proposals appear to be based on assumptions and applications of data that raise significant questions, demonstrated most obviously by an absurd result for Holden Beach that will have multiple negative impacts on our community. We urge the commission to allow more time to gather feedback and then make improvements and refinements that will lead to better, more-supportable proposals.

At the Holden Beach workshop, the most startling revelation was to learn that accretion and erosion were treated equally in terms of potential impact when the standard deviation was calculated and later applied in determining new boundaries.

This led to maps showing an unprecedented expansion of the west-end hazard area at Holden Beach. Obviously, "erosion" is bad, and "accretion" is good, so "oscillation" and "you can't predict the future" arguments have to be used to justify boundary lines that ironically penalize an area with a high standard deviation only because it's experiencing steady accretion over decades. (Indeed, reaching the water from oceanfront homes on the west end requires lengthy walks over dunes and very wide beaches. These long setbacks are quite visible to any observer.)

The one-size-fits-all approach might make sense if all beaches were created equally and behaved similarly. But that's not the case. Even if the oscillation argument is valid, empirical evidence of a steady, historic pattern should lead to adjustments in how the standard deviation results are applied to specific boundary lines. Plus, there appears to be no evidence that a pattern-change on the island's west end is likely or even suspected. If such evidence surfaces in coming years, you could expand the boundary at that time. There is little or no justification to apply such a severe, impactful change at this time.

Other criticisms of the report that seem pertinent include a lack of outside peer review and consideration to the characteristics of south-facing beaches, such as Holden, vs. east-facing beaches along the Carolina coast.

Finally, please consider the issue of "branding." This may seem like a small thing from a scientific perspective, but verbiage and presentation can have a huge influence on property values, taxation and the overall importance of North Carolina's beach communities to the state's growth and economy. For example, you should consider the workshop suggestion to get away from "red lines" – any other color will do. Most significantly, you could change the labeling to a phrase such as "inlet impact zone" instead of "inlet hazard area." After spending decades in journalism and communications, I know that words matter. Such a label change is supported by the very purpose of your work – which is to identify the areas that have the highest potential for impact. The difference between an existing hazard and a potential hazard that may never occur isn't just semantics.

We believe these points are among key concerns that support the need for delay, refinement and improvement of the proposal. Thank you for considering these remarks.

Best regards,
Dennis and Cheryl Hetzel
105 Golden Dune Way
Holden Beach NC 28462
614-940-5067
drhetzel@gmail.com

Dennis R. Hetzel | Principal
Fresh Angle Communications
Holden Beach NC 28462
614-940-5067 | drhetzel@gmail.com
...and check out my novels at DennisHetzel.com

(received via email: 1/31/2020)

31 January 2020

Renee Cahoon, Chairman
North Carolina Coastal Resources Commission
PO Box 714
Nags Head, NC 27959
Subject: Proposed Inlet Hazard Areas

This letter provides Town of Holden Beach comments to the North Carolina Department of Coastal Management in response to the proposed expansion of the Inlet Hazard Areas at Holden Beach. Specifically, we take exception as follows:

1. The public notification of potential impacts is and has been woefully inadequate to effectively apprise the public and potentially affected property owners. The rollout of the proposal over the Holidays was certainly untimely especially for a beach town with a disproportionate number of absentee property owners. Staff input from the local level into any methodologies used to develop the modeling has been next to nonexistent. What little communication on the matter that has taken place has been initiated from the local departmental staff to DCM and the CRC. The first opportunity to interact with staff as initiated by DCM was a public hearing set at Southport (not a beach community) which was not held at the advertised location and required extensive field contact to locate, leaving little time for a frustrated staff to interact. The absence of any real public notification significantly jaundices the CRC's efforts to develop a believable proposal.

2. The purpose for increasing the IHA is not self-evident or well defined, but recent comments at the CRC and by the participating members seem to indicate it is an effort to be better in line with the current rules and complete an update to the IHA that the CRC felt was well past its deadline. The Town of Holden Beach takes pride in its efforts of going beyond those guidelines applied under the CRC rules for protection of both private and public areas within the Town. Nowhere in the nine affected communities are the results of resource protection for

TOWN OF HOLDEN BEACH / 1 10 ROTHSCHILD STREET / HOLDEN BEACH / NORTH CAROLINA
(910) 842-6488 Fax (910) 842-9315 / http://www.hbtownhall.com

public and private properties more evident than the west end of Holden Beach. The Science Panel's myopic review naively ignored real evidence. Over a 60year period the west end of Holden Beach has had no structures impacted by erosion, therefore there is no justification to increase the area in question. This lack of loss is not due to any rule written by the CRC, but in fact is because of the Town's frontal dune designation, which as written and applied has kept structures beyond any proposed or existing setbacks in question. This very same Town ordinance is applied across the entire island, not excluding the enormous and lengthy amount of area included beyond the current Inlet Hazard Areas as defined by the CRC definitions.

3. When methodology is influenced by one sided perspective the outcome will always reflect the inherent bias of limited data; especially when there is little effort to include stakeholders or to gather contradicting information to show that the current rules may already be beyond that which is required to achieve the legislative intent. It appears that in order to attain a measurable change from the stasis of today the Science Panel developed their own ideals, ignored local conditions and simply attempted to move the goal post without bench testing the "model"". This approach has created a large outlier at Holden Beach that cannot be rationally explained. The only explanation that has been given is that the expectation for the west end of Holden Beach is for it to erode. The panel not only gave no credence to the stabilizing of the inlets as is clearly the case for the Shallotte Inlet, it now has developed projections for a future state that is devoid of even the most basic of modeling for inlet processes -many of which are readily available and commercially affordable. The irony that such modeling is a requisite for permitting of many beach and inlet projects does not go unnoticed. The methodology and its resulting projections are in complete contradiction to the engineering reviews done over a 15-year period at Holden Beach (Holden Beach Annual Beach Monitoring Report at http://hbtownhall.com). It also ignores FEMA data not only developed by the federal government using state of the art LIDAR collection methods and FEMA Firm Maps dated from 1987-2018 which have been reviewed by a rigorous public notification/review process and adopted by resolution at the local level. The findings of the Federal Science Panel and the North Carolina Department of Public Safety Science Panel contradict just about everything the CRC is claiming for the expansion on the west end of the Town's island. A good example is the growth and expansion in density of the dunes on the west end identified by one the most accurate methods possible, LIDAR mapping. The CRC science cannot be accurate and complete in its assessment based on its own rules for development and the fact that the panel ignored major components its own studies required for consideration, such as engineering to shore up the area, an established principle here at the Town of Holden Beach. The Science Panel also ignored part 5 of the IHAM methodology when they said they would consider local experts' inputs when developing an approach - no contact with the Town of Holden Beach's Coastal Consulting Engineer was ever made. Additionally, the panel made no effort to include local officials including myself, the Town's Shoreline Protection Manager, the Planning and Zoning Director, members of the Beach and Inlet Management Board nor any elected officials. At a minimum had the panel engaged with the Town's Coastal Engineer they would have become cognizant of the following three empirical facts that contradict expansion of the current inlet hazard areas.

1. Since dredging of the Shallotte Inlet began the inlet has remained stable. This is important when applied to the logic that the inlet has such a long effect on the shoreline. The Town's Coastal Engineer is of the opinion that as long as inlet maintenance is performed the west side will be

stable. Ocean Isle Beach is a participant in a federally authorized 50-year storm damage protection project that uses the Shallotte Inlet as a borrow source.

2. The sand located on the beach and the growth along the shoreline within that portion to be extended by the CRC from its current boundary has not and is not affected by the inlet, but instead that sand is deposited there from littoral drift east to west. The Science Panel's hypothesis that the inlet process of oscillation and the resultant change to the adjacent oceanfront shoreline in the proposed expanded IHA are 100% correlated is a fatal error of assumption. The Science Panel has assumed that the inlet processes are the sole cause of oceanfront change along the extent of the proposed new IHA when in fact the growth of the majority of the shoreline there is a direct result of 40 plus years of beach nourishment on the east and central portions of the island with said growth caused by east to west littoral drift depositions. A subsequent use of a standard deviation model to determine inlet impacts is a misapplication of statistical methods and the equivalent of using a hammer to change a tire - wrong tool for the wrong job. The Town's beach monitoring data just doesn't support the CRC position that the oscillating inlet is why this area has remained stable and has grown over the history of the island.

3. The most recent FEMA data shows that the dunes on the west end have grown so much since 1987 from the east to west migration that expansion of such a magnitude re-designated many homes that were in a V zone as A zone properties. This data scientifically indicates that the portion of the island is outside of any wave action as defined by the federal government, and clearly proves that the expanded Inlet Hazard Area is outside of any area affected by the Shallotte Inlet.

4. The Fiscal Analysis as required by rule is nonexistent. The DCM staff report fails in its attempt to quantify economic impacts. In fact, it basically says it can't be done. Holden Beach takes exception to the labeling of hundreds of additional properties as "hazardous" by placing them in an area that would make them harder to market. We currently have no limitations on size of structure. The IHA places limitations on lots that will certainly impact the future sale of those lots, a consequence that is measurable. The Town of Holden Beach Planning Department has analyzed the increase and determined that based on the expansion of the IHAs that significant economic impacts will occur in the IHA at the west end. The additional revenue lost based on moderate expansion for lot size could be greater than $38.5 million in personal equity to the property owners affected. This shows a callous disregard for individual property rights by developing a methodology that disproportionality affects one municipality or one portion of a community. This is effectively labeling these properties as limited in both their current and future uses. Most of these properties while already developed are turning over at about a 12 percent rate with removal and increase for their economic benefit. This in turn affects all property owners by reducing the ad valorem tax. This drastic increase from 59 properties to 368 properties has a real impact on the economics and future cost to live at Holden Beach. It is the position of the Town of Holden Beach that the lack of any real effort to estimate the real impact to these property owners was never performed to the extent that would provide credibility.

5. There is no appellate procedure for the misapplication of what is in effect a zoning action. To default to the "variance" process is an inappropriate use of a quasi-judicial process to provide for the redress of bad legislation. Why is it that there were no rules developed simultaneously with the IHA proposal that would allow for removal from the IHA, if the "science" that was used was in error? This adds illegitimacy to the process and leaves the public mistrusting both the State of North Carolina and CRC.

6. The Town of Holden Beach has no faith in the use of the application of the standard deviation used to justify the expansion of the Inlet Hazard Area at Holden Beach. In addition to aforementioned concerns over the misapplication of the standard deviation methodology the Town does not concur with the use of abnormally distributed data. These problems have clearly caused the incongruity between what we see on the ground and what is being portrayed as the future state.
7. Increasing the IHAs into areas previously designated as Ocean Erodible Areas leaves no room for the exceptions under the current guidelines and requires correction to allow for similar exceptions to the proposed rules. This is an issue in every community but is an absolute detriment to the 331 residential dwellings that will now be beyond the actual effect of the Inlet, If implemented as proposed I anticipate those so affected will conclude this is an administrative taking of property by rule of the pen.

The Town of Holden Beach respectfully requests that the CRC evaluate and reconsider the increase in the Il-IA as proposed by the draft rules. We request the CRC leave the current IHA in place and evaluate the proposed methodology five years from now for accuracy. This would make it very easy to determine if the science applied is the science that should be used. The way the draft rules are proposed uses almost $80 million worth of structures and $160 million of property as an experiment for accuracy on Holden Beach alone. It would be more prudent to distribute the science to state universities for applications testing for five years and then apply it if validity can be established.

David W. Hewett
Town Manager
Holden Beach NC

Cc: Larry Baldwin, Vice-Chair
Neal Andrew
Craig Bromby
Trace Cooper
Bob Emory
Robert High
Doug Medlin
Phil Norris
Lauren Salter
Robin Smith
Alexander D. Tunnell
Angie Willis
Braxton Davis DCM, Director

(received via email: 1/31/2020)

My name is Steve Johnson and I am an owner of multiple properties on the East End of Ocean Isle Beach (449 East 3rd St and 447 East 4th St). While I have no opinion on the other inlets, I am opposed to any immediate change of the Inlet Hazard Area of Shallotte Inlet at Ocean Isle Beach.

While I am well aware of the inflated erosion rates due to the shifting inlet, Ocean Isle beach has an Army Corp of Engineers approval to construct a terminal groin that is scientifically proven to drastically reduce the erosion rate. Considering that it has taken 40 years to update the last IHA, it is reasonable to assume that there will be no more frequent future updates if this proposal is implemented.

This proposal would needlessly place dozens of property owners in a hazard area that would no longer be at risk of erosion due to the groin. Therefore I strongly encourage you to exempt Shallotte Inlet at Ocean Isle Beach until the appealed lawsuit is thrown out and the groin is constructed. The updated hazard area can then be defined with the no longer inflated erosion rates.

At an absolute minimum, if the Inlet Hazard Area is to be immediately updated with these inflated erosion rates in place, the grandfathering clause should be extended to any structure with an approved CAMA permit prior to the rules update.

Thank you for consideration of my input.

-Steve Johnson
steve@stevemjohnson.com

(received via email: 1/31/2020)

1. Don't hurt the property owners value and investment
2. Any property owner should be able to rebuild if the property meets setback requirements
3. The inlet setback factors should stay the same until the Terminal Groin is completed
4. If new amendments are adopted it will be 5 years before the next evaluated
5 If Terminal Groin is completed in the next 24 months new updates want be fair to property owner
6. Regulations should stay the same until Terminal Groin is completed

Terry Kinlaw / Jimmie Lou Nichols
456 E 4th Street
Ocean Isle Beach
Terry Kinlaw btsterry@btstire.net

(received via email: 2/3/2020)

From: Anita Heard [mailto:gahgarden1@gmail.com]
Sent: Monday, February 3, 2020 1:42 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: [External] Response to IHA proposal for Holden Beach

To: Davis Braxton

From: Gary and Anita Heard

We purchase 969 Ocean Blvd West in March of 2019 as an investment home for our family. We have visited and stayed on Holden Beach for the past 12 years. We have been notified of your IHA proposal from the NC Coastal Resources Commission. Your proposal is very disturbing to HB and a very large number of our homes as home owners on the island. Where, How, and Why this Proposal came about is not known to us, because we have not read it or studied you data and reasoning. I am hoping this is NOT some engineers glorified computer generated prediction of inlet/shoreline doom based on what?

According to the" HB Resolution in Opposition " to your IHA proposal, it sounds and looks like you have not done your homework with working with the coastal communities and visiting and meeting with local engineers and the hundreds of people in this area that work hard to protect this HB turtle sanctuary and the dunes and vegetative growth lines. HB has decades of records and studies that say you are not right on your marks. Your HIGH RISK designation is disasterous for building, developing, improving, and selling/buying homes and properties. Insurance and economic impacts will be negative.

HB in our opinion and through everything we have seen and visited is spending large amounts of dollars from multiple sources to improve and protect their shorelines and inlets, and beaches. My house has 2 dunes with great vegetative growth on them. Sea oats and sand fences are flourishing and stabilizing. Your commissions report may not be backed up or proven by actual on site visits and analysis of Coastal Islands preservation of shorelines/dunes/ beaches.

I believe your commission needs to take some time and revisit your data and include the coastal communities on what the actual issues are and consider very strongly their input and efforts to protect our nations eastern islands and shorelines. You need to reconsider your reports impact area along with local experts who are actually there doing a great job of inlet shoreline management. It is their home and mine. I hope we didn't make a mistake in investing in NC.

Thank You for your time
Gary Heard
1976 Ridge Rd. Aledo, Il. 61231 309-221-6578

(received via email: 2/3/2020)

10 February 2020

Renee Cahoon, Chairman
North Carolina Coastal Resources Commission
PO Box 714
Nags Head, NC 27959

Subject: Proposed Inlet Hazard Areas

Dear Ms. Cahoon,

The Town of Holden Beach has provided comments previously in correspondence dated 31 January. Additionally; please find a technical memo from the Town's consulting coastal engineer regarding the matter.

Sincerely,

David W. Hewett
Town Manager
Holden Beach NC

Cc: Larry Baldwin, Vice-Chair
Neal Andrew
Craig Bromby
Trace Cooper
Bob Emory
Robert High
Doug Medlin
Phil Norris
Lauren Salter
Robin Smith
Alexander D. Tunnell
Angie Willis
Braxton Davis DCM, Director

TOWN OF HOLDEN BEACH / 110 ROTHSCHILD STREET / HOLDEN BEACH / NORTH CAROLINA
(910) 842-6488 / Fax (910) 842-9315 / http://www.hbtownhall.com

2019 Inlet Hazard Area (IHA) Report Notes/Concerns

The entire report seems to be based on the assumption that extreme erosion occurs at all NC inlets. As this excerpt from the introduction states:

"Oceanfront shorelines near inlets have long-term erosion rates approximately 5 times greater than other oceanfront shorelines."

The example Figure 1 below shows a "typical" inlet where higher erosion rates occur at an inlet. However there are several inlet shorelines that are accreting over the long-term and the inlet delineation methodology does not take this into account.

Figure 6. The LRR and the standard deviation of shorelines plotted relative to the alongshore transect numbers. Transects are spaced 82 feet (25 meters) apart. The vertical dashed line at transect-291 separates inlet influence from the oceanfront.

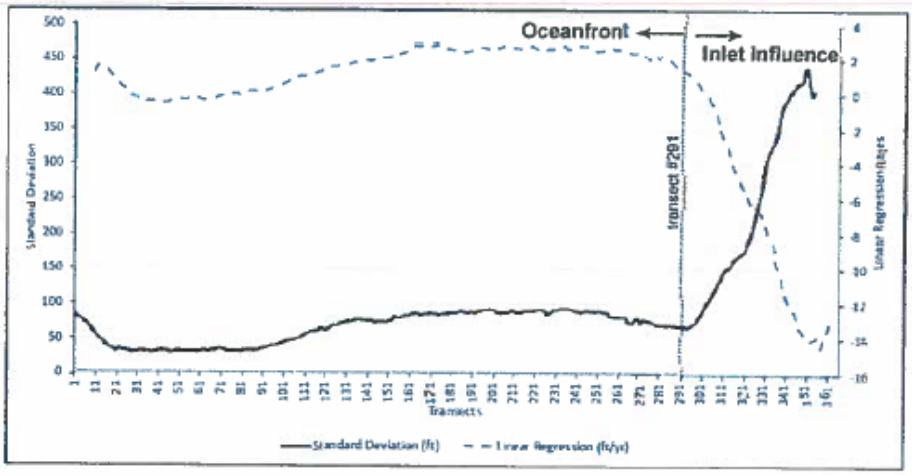


Figure 1: Example; Standard Deviation greater than ~100 and negative LRR. This makes sense and the inflection point is near where it should be (significant change in slope). But this is not very quantitative and appears to be "arbitrary and capricious" where this delineation occurs in figures 21, 25, 29, 65 (discussed later in this document). Issues include: 1) Areas where a positive LRR (ACCRETION) are treated the same as erosional shorelines. 2) StDEV value inflection points vary considerably.

Another excerpt from the report:

> **In these cases, the Panel used their professional knowledge of each inlet to aid in the delineation of the IHA boundaries. In some cases, they refined the shoreline dates used in the analysis or moved the IHA boundary to a more appropriate location based on the underlying geology. Specific details are provided in the descriptions for each of the inlets.**

It appears the Panel relies heavily on their professional knowledge because there is a lack of quantitative analysis regarding inflection points (or derivatives) where the delineation between Inlet and Ocean Influence occurs.

There appears to be an over-reliance on previous reports that are based primarily on professional knowledge and qualitative analysis of sporadic aerial photography. Aerial photography does not take into account high/low tide, seasonal fluctuations, spring/neap conditions and time between aerials can span a couple years to a decade.

For example it is cited for Shallotte Inlet:

"Since the late 1960's the ebb channel has generally been aligned in an SE-ESE direction, which has favored the accretion along the Holden Beach shoulder that has led to the bulbous shape of the western end of the island. By contrast, during the same interval, the Ocean Isle oceanfront shoreline has experienced chronic long-term erosion."

This general idea that if the channel is closer to the island, it accretes while the other side of the inlet erodes is much too simple however it appears to be applied to most of shallow-draft inlets along the NC coast. North Topsail Beach even performed an inlet channel realignment largely based on this notion and this project was not successful in changing the island's erosion rate. Likewise, modeling of Lockwood Folly Inlet of different channel locations/alignments did not show a significant effect on erosion/accretion trends of nearby shorelines. Note that some small changes were noted when comparing different channel alignment alternatives, however these changes were insignificant in the overall scheme of things (for example, an erosion rate might change from -6 ft/yr to -5.5 ft/yr for a small section of shoreline).

Another example where the channel location is cited as the primary cause for erosion on one side of the inlet and accretion on the other:

"The accretional cycle caused by the ebb channel alignment close to the Holden Beach shoreline, which began in the 1970s, results in an underestimate of the difference between the 30- and 90-Year Risk Lines closer to the inlet. To compensate for this, beginning at transect-90, the Panel adjusted the landward boundary to follow the existing IHA boundary and to connect with the inlet end of the 90-Year Risk Line (Figure 22)."

This idea that one side of the inlet accretes while the other side erodes also appears to disagree with the overall assumption that inlet shorelines erode at much higher rates than oceanfront shorelines.

Figures 2-5 are excerpted from the report and the inlet/oceanfront inflection points do not appear to coincide with the change in LRR or StDev. Additionally, the LRR and StDev values where the oceanfront/inlet inflection points occur appear to vary significantly.

Figure 21. Based on the standard deviation of shoreline position at Shallotte Inlet-Holden Beach, transect-170 is recommended as the inlet-ocean transition boundary along the shoreline. Negative Linear Regression rates indicate erosion, while positive values represent accretion (right axis).

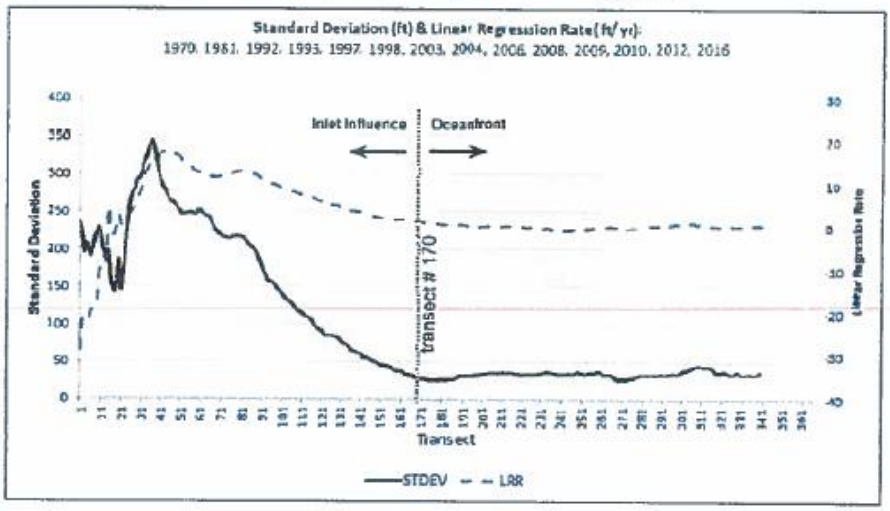


Figure 2: STDEV less than 50 (why not more like 100? Like example). LRR is positive (accretional). If this is inlet influenced, then this is a positive influence. No clear inflection point

Figure 25. Based on the standard deviation of shoreline position at Lockwood Folly Inlet-Holden Beach, transect-477 is recommended as the inlet-ocean transition boundary along the shoreline. Negative Linear Regression rates indicate erosion, while positive values represent accretion (right axis).

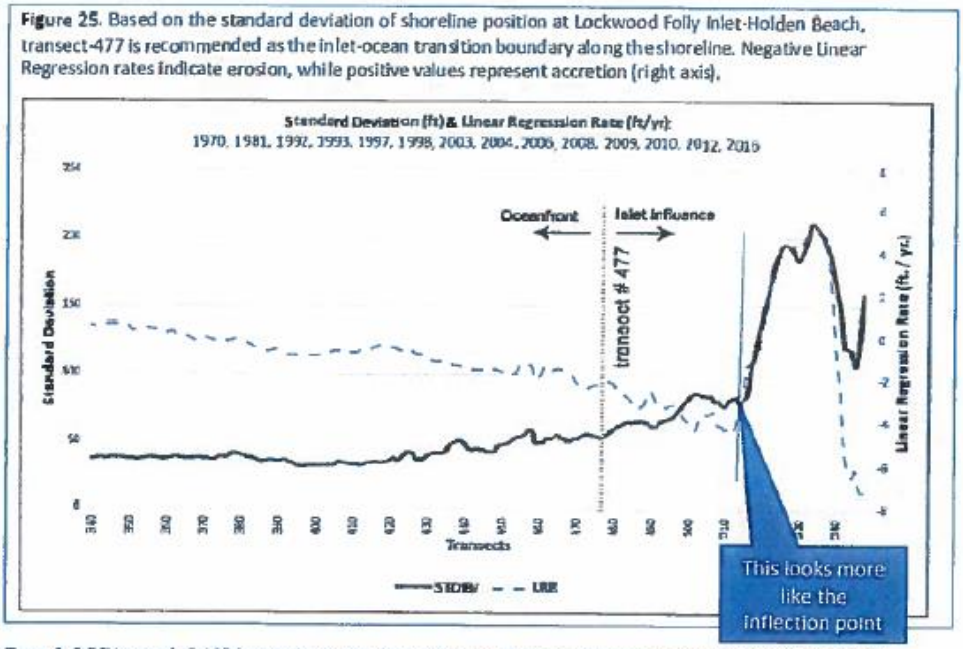


Figure 3: StDEV around 50, LRR is negative except close to the inlet. Again kind of strange since this indicates long-term accretion.

Figure 29. At Lockwood Folly Inlet-Oak Island, inlet transect-70 is recommended as the inlet-ocean transition boundary along the shoreline. Negative Linear Regression rates indicate erosion, while positive values represent accretion (right axis).

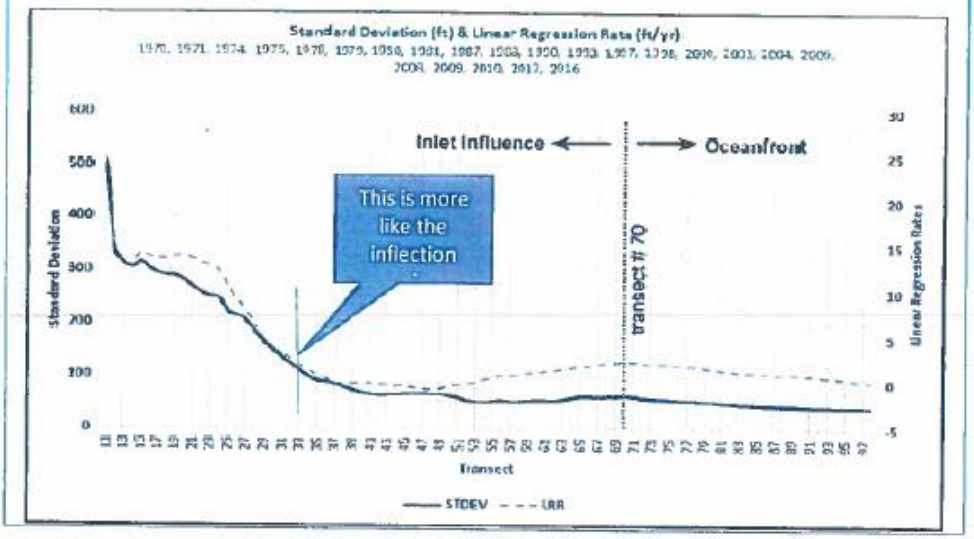


Figure 4: Oak has LRR ft/yr of generally greater than 0 (accretional). Besides a small section of shoreline.

Figure 65. Based on the standard deviation of shoreline position at New River Inlet at North Topsail Beach, transect 1345 is recommended as the inlet-ocean transition boundary along the shoreline. Negative Linear Regression rates indicate erosion, while positive values represent accretion (right axis).

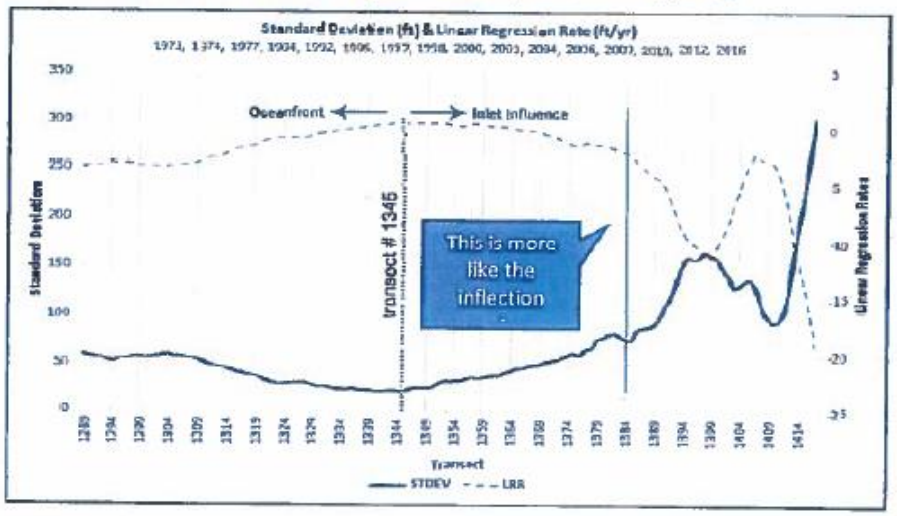


Figure 5

DSAS analysis and SBF

DCM's erosion and setback analysis clearly shows the west ends of Holden Beach and Oak Island as long-term accretional. See figures 6 and 7.

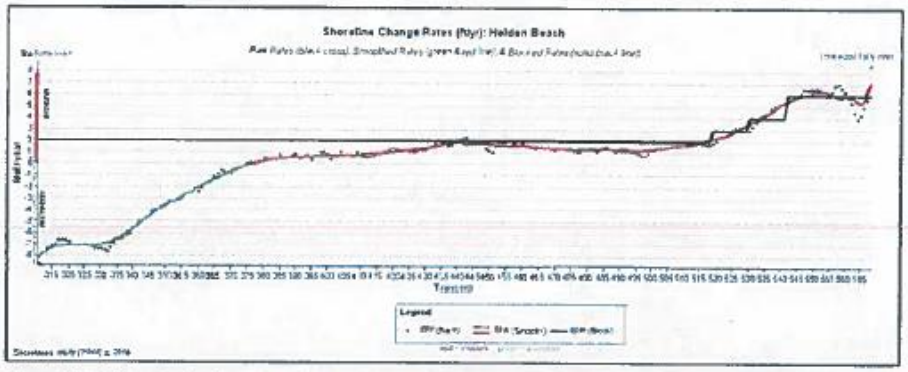


Figure 16. Holden Beach shoreline change rates and blocked rates (setback factors). Black-points represent all (erosion and accretion) raw rates; smoothed rates are represented by the solid green (accretion) and red (erosion) line; and the solid black line represents blocked rates (setback factors).

Figure 6: Significant accretion along Holden Beach's Shallotte Inlet.

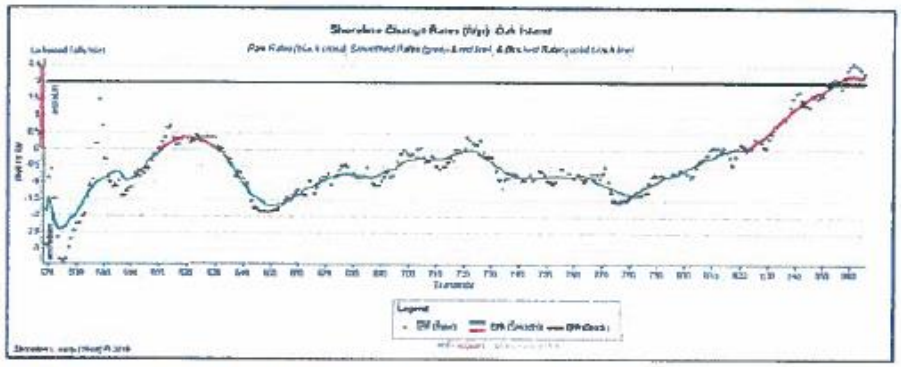


Figure 18. Oak Island shoreline change rates and blocked rates (setback factors). Black-points represent all (erosion and accretion) raw rates; smoothed rates are represented by the solid green (accretion) and red (erosion) line; and the solid black line represents blocked rates (setback factors).

Figure 7: Oak Island's west end is ACCRETIONAL except for one small hotspot.

Figure 8 presents of comparison with 2010 IHAs which were never instituted with the existing and proposed. The 2019 proposed IHA is even bigger than the 2010 IHA.

Figure 8: So the 2019 proposed IHA is even bigger than the 2010 IHA. The dune system is over 600 feet wide in some of these areas.

Other notes:

The financial analysis cites a potential to detrimentally impact the FEMA Community Rating System. This is slightly concerning in that DCM has maintained that the IHA would not affect NFIP or other federal flood mapping policies/guidelines, etc.

The significant accretion along Holden Beach's west end is a result of the inlet influence as well as the nourishments to the east (updrift).

While the LRR, StDev and hybrid vegetation line method appear to be sufficient, the method for delineating the inlet/ocean influence does not appear to be quantitative and instead relies solely on the Panel's discretion. Accretional LRRs are ignored in some cases as long as Standard Deviations increase. Of course delineations based on Standard Deviation also vary significantly related to it value (25, 50, 100, etc.) and even the inflection point chosen.

(received via email: 02/25/2020)

Mr. Richardson and Mr. Davis,

We are writing in opposition to the Inlet Hazard Area (IHA) Proposal by the NC Coastal Resources Commission as it pertains to our property and many other properties on Holden Beach, North Carolina.

My wife and I are 10 year property owner's of 1333 Ocean Blvd. West, Holden Beach, NC 28462.

We strongly oppose the proposed changes to the Inlet Hazard Area on Holden Beach, NC and support the Resolution in Opposition to the IHA Proposal as presented by the Holden Beach Property Owners Association for the following specific reasons:

The property owners in Holden Beach, would be negatively impacted by these proposed changes. The economic and environmental health of the entire island would be negatively impacted the the new IHA restrictions, thus jeopardizing property values, the tax base and island businesses.

The west end of Holden Beach has been accreting for the last fifty years, to which we have personally witnessed for the past 10 years, and this growth was not accounted for in the new IHA designation.

The new IHA will restrict the stated purpose of protecting life and property, since should it ever be necessary, nourishment of Holden Beach's western-most two-and-a-half-miles would be ruled out under the proposed new IHA regulations, restricting property owners' ability to protect their properties.

The proposed IHA would stigmatize properties as "high risk", negatively impacting existing home sales and new construction.

The Inlet Hazard Area Method (IHAM) does not account for accreting beaches, but rather penalizes these beaches for natural accretion and/or nourishment of areas not in the proposed IHA.

The result of the changes will be to direct building away from one of the safest parts of our island, which is opposite the purpose of IHA's.

We strongly support the Holden Beach Property Owners Association (HBPOA) in asking for further time, education and discussion regarding the CRC's proposed boundaries and rules (e.g., proposed new Inlet Hazard Area setback rules, property size restrictions, and impacts on property owners' ability to develop their properties).

We personally welcome you to our home on the west end of Holden Beach to see the properties that will be so negatively impacted by these proposed changes to the IHA.

Thank you for your consideration of this highly important matter,

Douglas & Jenny Kuck (jenny.kuck@gmail.com)
1333 Ocean Blvd. West
Holden Beach, NC 28462

(received via email: 2/26/2020)

Wayne M. Bach
1217 Ocean Blvd. W
Holden Beach, NC 28462

February 25, 2020

VIA FIRST CLASS MAIL AND EMAIL: DCMcomments@ncdenr.gov
Mr. Braxton Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

RE: Inlet Hazard Area Updates

Dear Mr. Davis:

As President of the Holden Beach West Property Owners Association and its 166 members I am submitting to you the attached comments on the Inlet Hazard Area Plan. Thank you very much for your concern and efforts and I thank you in advance for your kind consideration of our comments.

Very truly yours,

Wayne M. Bach
President Holden Beach West
Property Owners Association

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

INTRODUCTION

These comments have been prepared as representative of concerns that owners in the Holden Beach West (HBW) subdivision may have. The comments are in response to the Coastal Resource Commission's (CRC) request for comments on its proposed Inlet Hazard Area (IHA) update and rule amendments. The comments should not be taken as a complaint of the current designation, but rather as expressing strong concerns about logic applied and decisions taken that have resulted in the currently proposed, much expanded inlet hazard area boundaries for the western end of Holden Beach as defined in the February 2019 document entitled "Inlet Hazard Area Boundary, 2019 Update: Science Panel Recommendations to the North Carolina Coastal Resources Commission" issued February 12, 2019, the document entitled "Fiscal Analysis: 2019 Update of the Inlet Hazard Area Boundaries, Setback Factors & Rule Amendments 15A NCAC 07H.0304, 15A NCAC 07H.0306, 15A NCAC 07H.0309, 15A NCAC 07H.0310" and the rule amendments 15A NCAC 07H.0304, 15A NCAC 07H.0306, 15A NCAC 07H.0309, 15A NCAC 07H.0310.

We appreciate this opportunity to provide input into the various premises, analyses and decision making processes that have been applied to help ensure the IHA boundaries and rules pertaining to development within those boundaries do indeed define the locations that "are especially vulnerable to erosion, flooding and other adverse effects of sand, wind, and water **because of their proximity to dynamic ocean inlets** (emphasis added)." [NCAC 15A 07H.0304(2)] and provide a credible level of protection thus inspiring public confidence.

SUMMARY

The HBW subdivision encompasses the westernmost section of Holden Beach, ending at the Shallotte Inlet. HBW has two defined phases, with Phase 1 extending from 1193 to 1335 OBW and Phase 2 continuing from 1337 OBW to the westernmost oceanfront property on the island, 1365 OBW. The 1979 IHA boundaries terminate around 1285/1289 OBW on the oceanfront and 1292 OBW on the second row, encompassing all of Phase 2 lots (either developed or still empty) and approximately one third of Phase 1 lots (developed or empty). Under the proposed IHA boundaries, all HBW oceanfront properties fall within the IHA as well as all second row and cul-de-sac properties west of approximately 1224 OBW (approximately 85% of Phase 1 properties). Additionally, the proposed IHA encompasses oceanfront properties more than a mile east of the HBW community.

The current boundary and rule amendment proposals appear overly conservative and overly protective, resulting in a negative definition for a section of Holden Beach that has been arguably the most stable section of the island for oceanfront and ocean view development. The proposed boundary expansion and rule amendments do not bring any meaningful improvement to identifying risk for current owners or potential developers or buyers, but they do have the real potential to negatively impact property owners' rights to rebuild following a storm event that causes damage due to wind and/or wave action significantly distant from the inlet area.

Holden Beach West agrees with the Town of Holden Beach comments dated 31 January 2020 requesting that the CRC re-evaluate and reconsider the increase in the IHA as proposed by the draft rules. Before taking any final decisions:

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

1. The CRC should request peer review of the proposed methodology to determine its general applicability and robustness for both east and south facing islands.

2. The Science Panel should seek local experts' inputs, as well as examine existing data, such as that found in the 15 years of engineering reviews for Holden Beach and federal data using LIDAR collection methods, and issue a new evaluation including all relevant data.

3. The Science Panel needs to be more transparent and explanatory in how it came to select the data it considered relevant and any expert judgement it applied, since the methodology was developed from select maps and expert judgement, neither of which are fully transparent to the public.

4. The CRC should consider defining areas of concern in terms of influence or risk instead of hazard.

5. The CRC should re-examine and re-define its grandfathering provisions and in particular apply the eventual date of enactment rather than 2009 for rebuilding destroyed or heavily damaged structures.

6. The CRC should examine whether there are potential impacts on rebuilding or repairing private roads and, if so, define potential remedy as is done for DOT and local government roads and infrastructure.

7. The CRC must do a proper fiscal analysis of the consequences of any IHA expansion.

8. The CRC should develop a rule to allow for removal of properties from the IHA if it can be shown the inclusion is not warranted.

9. The CRC should leave the current IHA in place and evaluate the proposed methodology over the next 5 years for accuracy. As suggested by the Town in its response, state universities could perform applications testing during that period to determine the method's validity.

HOLDEN BEACH WEST BACKGROUND AND CONSIDERED OPINION OF THE CRC's PROPOSED IHA BOUNDARY

In 1962, the Holden Beach Realty Corporation purchased the land at the west end of the island for subsequent development of a residential community, which began in the late 1970s. The HBW subdivision has two defined phases, with Phase 1 extending from 1193 to 1335 OBW and Phase 2 continuing from 1337 OBW to the westernmost oceanfront property on the island, 1365 OBW.

The 1979 IHA boundaries run from the inlet to a location at approximately the western most cul-de-sac in Phase 1 known as Salicornia; it currently terminates around 1285/1289 OBW on the

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

oceanfront and 1292 OBW on the second row, encompassing all of Phase 2 lots (either developed or still empty) and approximately one third of Phase 1 lots (developed or empty). The first houses in HBW Phase 1 were built in 1978 and 1979, none within at least half a mile of the 1979 IHA boundary. Building in Phase 1 east of the existing IHA occurred predominantly in the 1980s and 1990s. Since 2000, across all of Phase 1, approximately 10 oceanfront structures have been constructed (3 since 2009), three of which are outside the current IHA, and 4 second row structures, all within the current IHA. The first Phase 2 house was built in 2001. Empty lots are still available in both Phases for future building of residential structures according to the Town building code and the Property Owners Association bylaws and architectural rules.

Under the proposed IHA boundaries, all HBW oceanfront properties fall within the IHA as well as all second row and cul-de-sac properties west of approximately 1224 OBW (approximately 85% of Phase 1 properties); additionally, the proposed IHA also encompasses over a mile of oceanfront properties east of the HBW community. This is a significant negative impact for a community on what has been perceived to be the lower risk end of the barrier island.

Some CRC Science Panel recommendations over the past 20 years raise questions as follow.

1. In 1998, the CRC Science Panel recommended the IHA be revised with direction provided as follows: "The Panel recommends that the delineation of the Inlet Hazard Areas be revised after a review of site-specific studies of each inlet by a group of experts. The hazard zone delineation shall consider such factors as previous inlet territory, structurally weak areas along migration pathways, unusually low and narrow sections of barriers prone to breaching, external influences such as jetties and channelization, and increased erosion extending along adjacent shorelines."

The western third of Holden Beach island which is now being proposed for inclusion in the new IHA boundary has stood firm over the 40 years since the initial establishment of the IHA. The extent of this expansion does not appear supportable based on the above criteria for the following reasons:

a. It is hard to visualize two and a half miles east of the Shallotte Inlet being considered as previous inlet territory based on inlet maps going back to the 1960s (the period being viewed so as to allow for stabilization post AIWW creation and post Hurricane Hazel). There are no recently closed inlets in this area of the island that could be added to the consideration.
b. The Shallotte Inlet is oscillating, not migrating. Structurally weak areas along migrating pathways does not seem relevant.
c. Management of the AIWW and Shallotte Inlet by the Army Corps of Engineers adds to confidence that the west end will remain stable (professional opinion of the Town's coastal engineer, stated in the Town's response to the IHA).
d. The western third of Holden Beach has not been over washed or breached by hurricanes or nor'easters in the over 40 years since the IHA was first established, even without beach nourishments, although it is acknowledged that due to east to west sediment transport the area does benefit from east and central reach nourishment projects. No properties in the area have ever required sandbags or other artificial stabilization means.

e. When looking at erosion of adjacent shoreline over the past 20 years, in the multitude of existing THB monitoring reports, there appears to be little variation in the documented shoreline positions when examining the beachfront significantly east of the current IHA.

2. In its current proposal document, the CRC Science Panel states "Oceanfront shorelines near inlets have long-term erosion rates approximately 5 times greater than other oceanfront shorelines. Much larger oscillations in the oceanfront shoreline near inlets can also occur over several years or decades. These fluctuations are most often caused by movements in the primary ebb channel through the offshore bar. As the channel moves closer to one island, sections of that shoreline accrete while the other island erodes near the inlet. When the channel shifts by natural processes or dredging, the oceanfront process reverses. The island previously losing then gains, while the other side of the inlet loses what it previously gained and sometimes more. The oscillations may not contribute to the long-term erosion rate but can be a short-term threat to coastal development."

The above again raises questions.

a. As stated earlier, looking at erosion of adjacent shoreline over the past 20 years, in the existing THB monitoring reports, there appears to be little variation in the documented shoreline positions when examining the beachfront east of the current IHA.

b. Looking at the historic inlet atlas animation maps as suggested in the Science Panel document, large (a subjective word that would benefit from clarification) fluctuations in the primary channel from 1985 to 2018 are not apparent. The portion of the Science Panel description of the Shallotte Inlet follows.

"Since the late 1960's the ebb channel has generally been aligned in an SE-ESE direction, which has favored the accretion along the Holden Beach shoulder that has led to the bulbous shape of the western end of the island. If the ebb channel becomes more westerly, then this accreted sand is expected to erode. Ocean Isle had the same bulbous shape between 1938 and 1958 before the ebb channel shifted and caused erosion at the eastern end of Ocean Isle. If the ebb channel once again re-orients itself toward Ocean Isle, the bulbous shape will return to Ocean Isle, and Holden Beach will erode.

In 2001, the US Army Corps of Engineers constructed a beach nourishment project along 17,000 feet of Ocean Isle Beach extending west from Shallotte Boulevard. Material used to construct the project was obtained from a borrow area in Shallotte Inlet that extended from near the AIWW, seaward to approximately the 17-foot depth contour. In essence, the borrow area created a new ebb channel oriented perpendicular to the adjacent shorelines. The location of the Shallotte Inlet channel was based on historic positions and alignments of the inlet's ocean bar channel, which seemed to have positive impacts on the east end of Ocean Isle Beach."

Examining the maps from 2000 to present, to the untrained eye it is difficult to find a significant short- or medium- term erosional impact on Holden Beach eastward of the current IHA boundaries. More detail on how the Panel drew its conclusions from the maps would be beneficial and is necessary for the public to have confidence in the Panel's recommendations.

c. If the oscillations are not a long term, but rather a short term, threat to development, as previously quoted ("The oscillations may not contribute to the long-term erosion rate but can be a short-term threat to coastal development."), the applicability of 30- and 90- year erosion lines seem questionable. There should be other means to ensure new development near inlets is appropriately regulated considering short term threats.

The current boundary and rules amendment proposals appear overly conservative and overly protective, resulting in a negative definition for a section of Holden Beach that has been arguably the most stable section of the island for oceanfront and ocean view development. The new proposal does not appear to meet one of CRC's most important management objectives, which is to ensure that development is compatible with natural characteristics of coastal areas while also minimizing the likelihood of significant loss of private property and public resources.

The proposed boundary expansion and rule amendments do not bring any meaningful improvement to identifying risk for current owners or potential developers or buyers, but they do have the real potential to negatively impact property owners' rights to rebuild following a storm event that causes damage due to wind and/or wave action significantly distant from the inlet area. The changes do not help minimize the loss of public resources, and in fact may transfer burden to the County and State level, since in the absence of development on the western third of Holden Beach, there would be little incentive for the Town to expend significant resource that would keep that portion of the island robust and thereby protect the AIWW, a valuable piece of Federal infrastructure that also brings recreational tax benefit to the County and State economies.

The CRC needs to reconsider the purpose of identifying an Inlet Hazard Area with no examination and quantification of risk, its methodology for establishing new IHA boundaries, and the consequence of its proposed rules for development and rebuilding, particularly in communities already adhering to more stringent ocean front property development rules than currently imposed by CAMA.

SPECIFIC POINTS OF COMMENT:

Holden Beach is one of five barrier islands located in Brunswick County, NC. The island is a west to east oriented island, bounded by the Atlantic Intracoastal Waterway (AIWW) on the north, the Atlantic Ocean on the south facing the Long Bay region of Brunswick County, the Shallotte Inlet to the west and the Lockwood Folly (LWF) Inlet to the east.

Brunswick County beach communities such as the Town of Holden Beach rely upon a stable and predictable regulatory framework for development, one that ensures land use rights and property values are maintained for residential and commercial property owners in order to assure continued investment in both maintenance and expansion of properties in said communities, always in accordance with mandated zoning and building codes established to both protect property owners and address the special environmental protection requirements for barrier island ecosystems.

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

The CRC Science Panel has made significant effort to analyze the ten active inlets included in the report and develop proposed IHA boundaries with the objective to accurately reflect the potential erosion hazards for actual developed portions of barrier islands that are adjacent to inlets as covered in the science panel report. As presented in the fiscal analysis document, the CRC has also proposed amendments to their rules in accordance with one of their management objectives to ensure that development is compatible with natural characteristics of coastal areas while also minimizing the likelihood of significant loss of private property and public resources (NCAC 07H.0203).

Following are a number of points that should be addressed by CRC before moving forward with finalization of documents or decision making.

Definition of Inlet Hazard Areas with No Attempted Quantification of Risk

Everyone lives with hazard. Daily activities such as crossing a street, eating food or taking a shower all involve hazard. The mere existence of hazard should rarely dictate decisions. It is the level of exposure along with the severity of the hazard that defines risk, which can then be used to form a rational basis for one's choices. Hazard can be mitigated; for example, by only crossing a street at defined crosswalks or at stoplights in addition to looking both ways before crossing, the potential exposure to a moving vehicle is much reduced and the risk of being hit drops tremendously.

Hazards can be cumulative in nature: the longer the exposure, the higher the risk. In such cases, a lifetime probability of a negative impact (such as some chronic disease) might be defined. Perhaps the concept of inlet hazard for beach shoreline adjacent to accretional ends of islands could fall into this category.

The concept of Inlet Hazard may benefit from segmentation into Inlet Hazard and Inlet Influence areas, or even a complete re-expression as Inlet Risk with a number of probability segments defined depending on the distance between a property and the inlet (as an example, state the 1 in 100 and 1 in 1000 probability of inlet influenced erosion taking a property or making a lot unbuildable over a period of time, perhaps the 30 year period of a mortgage). The concept of segmentation or redefinition should be considered by the Science Panel and its reasoning and decision clearly explained to the public.

Method Robustness and Validity for all Scenarios

We are concerned that the single method that has been developed for defining IHAs is not appropriate for the range of situations that make up the NC shoreline. As frequently stated in the literature, ocean and inlet impacts differ to some extent for each barrier island. In particular it is difficult to conceive that what may be appropriate for east facing islands is equally applicable to the south facing islands as exist in Brunswick County, and that what may be appropriate for the east end of south facing islands is equally applicable for the west ends of said islands, knowing that in Long Bay littoral transport of sediment occurs from east to west. Concerns and questions are given below.

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

1. The CRC Science Panel states in its document that "the alongshore boundary of the IHA is identified by an increase in shoreline change variability compared to adjacent shoreline that is not influenced by the inlets. The Panel also stated "Away from inlets, the existing vegetation line is a useful reference feature for the long-term erosion trend. However, the dynamic oscillations or higher variability near inlets are not reflected in the most recent vegetation line and are better represented by a Hybrid-Vegetation Line, which is based on the landward limits of the historic vegetation lines over the period of study." The Hybrid-Vegetation Line (HVL) represents the landward-most position of all vegetation lines mapped at each inlet. The HVL is most often a composite of landward-most segments from multiple dates, or in some instances may represent only a single date. The HVL is significant because in an inlet environment where erosion and accretion can occur rapidly, it represents the landward-most position of where the hazard once existed. In addition to providing an improved reference feature for defining the IHA, the HVL was the most effective of several methods tested by the Panel to incorporate the higher variability of the inlet shorelines into the IHA boundaries."

   The Hybrid-Vegetation Line (HVL) for the western end of Holden Beach represents the landward-most position of all vegetation lines mapped at each inlet, i.e., is a composite of landward-most segments from multiple dates. Establishing the HVL for on an accreting section of the island with a composite methodology seems overly conservative. More information and justification are needed on why the HVL is applicable for both accreting and eroding inlet areas. Why is it not more appropriate, for example, to use data from (x)sequential years that looked to represent an erosional trend following a period of stability or accretion trend?

2. The CRC Science Panel wrote the following on the advantages of using a linear regression methodology (page 18):

The benefits of linear regression include:
a. All data are used, regardless of changes in trend or accuracy.
b. The method is purely computational.
c. The calculation is based on accepted statistical concepts.
d. The method is easy to employ.

And:

Although the linear regression method is less sensitive to individual points, it is susceptible to outliers; it assumes that the computed trend is linear, and it tends to underestimate the rate of change relative to other statistics, such as the end-point rate.

From a layman's point of view, there are several questions on the above stated benefits.

1. Using data regardless of accuracy is not easily comprehended; further explanation and examples of why this is a strength are called for.
2. A purely computational method requires a rigorous examination of the results, with particular attention to the reasonableness of the results. Further explanation of why large

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

expanses of islands on the accreting side of the inlet are now being designated IHA is necessary.

3. The above also applies to calculation based on statistical concepts.
4. The public is not going to use this method, nor are local government officials. The ease of the methodology therefore should not be a major consideration, particularly as it will only be applied by CRC every 5 years (if the proposed reanalysis cycle is accepted).

Since the methodology was developed from select maps and expert judgement, neither of which are fully transparent to the public, it is difficult to judge the appropriateness of the new boundaries at any inlet. The CRC Science Panel needs to be more transparent and explanatory in how it came to select the data it considered relevant and any expert judgement it applied. Additionally, susceptibility to outliers and the potential influence on decision making needs to be addressed.

Lastly, defining features of oceanfront vs inlet influences in relation to sediment transport were given in the presentation made by CRC to Holden Beach residents on 16 January 2020. Does the entire stretch of the proposed expansion of the Holden Beach west end IHA boundary "fail" the oceanfront sediment transport criteria? A discussion specific to sediment transport along the western third of Holden Beach and where there is evidence that transport becomes inlet rather than oceanfront driven should be provided.

Oceanfront Sediment Transport	**Inlet Sediment Transport**
Approaching Waves: •longshore & cross-shore transport	Interrupt longshore transport •downdrift beaches cut off from sediment
Storms: •cross-shore transport & over wash	Trap sediments •flood shoal on the inside •ebb shoal outside
Shoreline Response: •linear & shore parallel •adjacent areas move the same (erosion or accretion)	Have long & short-term influence •New Topsail Inlet opened in 1726 •still affecting coast ~300 years later •Since 2009, 0.7 mile of erosion at Shackleford Banks (Beaufort Inlet)
	Oscillate •eroding one side, accreting on the other •then the pattern reverses Rich Inlet (oscillation) New Topsail Inlet *(migration)*
	Migrate •in the direction of net longshore current •New Topsail Inlet moved ~6 miles southwest

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

The Need for Outside Review and Opinion:

This method has not been sent to other expert panels or individuals for comment/peer review. We find this concerning. While we appreciate the excellent credentials of each individual on the CRC Science Panel, their individual proven expertise is not justification for not seeking outside opinion. The example of Linus Pauling, a Nobel Prize winning chemist, and his mistake in identifying the structure of DNA comes to mind. The original manuscript did not receive the level of peer review that was called for on such an important proposal. The basis of his work was acknowledged by immediate colleagues, but while there had been much effort making the data fit, there was less consideration of the biological significance - it was thought that if the structure was right, the biological importance would fall out of it naturally in some way. Pauling himself wrote that it accounted only moderately well for the existing data and was probably capable of further refinement. Pauling's proposed structure was proven wrong due to a fairly elemental error. Had the proposal been adequately peer reviewed, Pauling would have avoided a very public retraction that cast a cloud over an otherwise stellar scientific career.

The time spent obtaining outside expert opinion of the methodology will be well worth any delay in moving forward and do much to reassure the public of the scientific credibility of CRC.

Fiscal Assumptions for Inlet Hazard Area and Concerns on Amended Rules

The September 4, 2019 CRC memorandum states "Within the context of these rule amendments it is not anticipated that the $1M impact threshold would be exceeded, primarily because these amendments do not prevent development from occurring within the IHA." I question whether, with no quantification attempt made at all, it is clear that the 1-million-dollar threshold is not at threat. While it can be agreed "there are unknowns and uncertainties associated with forecasting property owners' intentions, storm magnitude and frequency, or barrier island responses to inlet and ocean forces" and "existing research indicates that erosion rate may decrease the value of oceanfront property but that affect is overshadowed by the much larger value homeowners place on being located next to the ocean", it does not necessarily preclude some level of estimating potential monetary impact on individual inlet areas.

It is apparent that changes that make an additional 431 acres of land around the Shallotte Inlet (sum of both sides) in addition to expanding restrictions on existing parcels will have an impact on our owners and communities. Regarding property tax, a comparison of the difference in property tax on a 3700 square foot home, the estimated average size for the Shallotte Inlet, versus a 2000 square foot house if this became the only allowable build on a lot could be presented. Many properties are built on islands for rental income; the relative weekly rental rate for the different sized houses, which would have impact on property owner income and municipal and county occupancy tax revenue, could also be presented. The same could be done for all inlet areas to provide an estimate rather than avoiding the topic altogether.

Regarding the rules, further education and discussion regarding the proposed rules are called for. There are concerns, for example, that the proposed rule changes may be viewed as attempted takes in that rule changes and setbacks would prohibit development it is not currently prohibited. Grandfathering protection is not clear. Property size restrictions for rebuilding in case of 50% or

24 February 2020
Comments on behalf of the Holden Beach West Property Owners Association

more damage needs further clarification; the CRC should re-examine and re-define its grandfathering provisions and **in particular as a matter of fairness apply the eventual date of enactment rather than 2009 for rebuilding destroyed or heavily damaged structures**. While there is clear language that the proposed amendment will not affect permitting for DOT or local governments for public roads and infrastructure, what consideration will be given to private roads such as HBW owns and maintains? All of these topics and undoubtedly others are of the utmost concern to property owners in impacted communities.

Wayne Bach <WayneB@hickorylaw.com>
Wayne M. Bach | Partner
Young, Morphis, Bach & Taylor LLP

T: 828.322.4663 | **F:** 828.322.2023

First Lawyers Building
858 2nd Street NW, Suite 200 (28601)
Post Office Drawer 2428
Hickory, North Carolina 28603

wayneb@hickorylaw.com | www.hickorylaw.com

(received via email: 2/28/2020)

BUSINESS ALLIANCE FOR A SOUND ECONOMY

February 28, 2020

RE: INLET HAZARD AREAS METHODOLOGY AND RULES

BASE, Business Alliance for a Sound Economy, is an organization that advocates for business and industry in southeastern North Carolina. BASE has a range of business members, as well as formal advocacy partnerships with groups like the Wilmington Chamber of Commerce, Wilmington-Cape Fear Home Builders Association and Brunswick County Association of REALTORS®. Our mission is to support public policy that attracts a mix of business and industry and enhances economic opportunities in southeastern North Carolina

We appreciate the time and hard work by the Coastal Resources Commission, Coastal Resources Advisory Council, and Division of Coastal Management staff on this complex issue. The hands-on meeting in Ocean Isle Beach seemed to be especially well-received by the room full of concerned property owners.

It is our hope that the concerns identified throughout this process will lead to changes to the proposal and additional comment before it is brought forward for formal adoption.

The IHA zones and rules have remained relatively unchanged since 1981. In 2010, the Coastal Resources Commission did propose a rule change to refine the IHA boundaries, but that proposal was not carried forward. In part, this was due to concerns about what changes would be made to the development standards within the newly refined IHAs in light of the increased size of the proposed IHAs.

Since setting aside the proposed rule changes in 2010, the CRC has further studied the IHAs and now proposes new IHA boundaries and revised rule language.

Over the same period, the state of North Carolina and individual communities have continued to proactively advance coastal management strategies including the creation of a shallow draft inlet fund, the permitting of terminal groins and investment in continued coastal storm damage reduction projects to enhance our coastal infrastructure.

Concerns:

- **The impacts of the expanded Inlet Hazard Areas and revised setback calculations will be widespread and significant.**
    - Has DCM specifically notified property owners that will be in the expanded Inlet Hazard Area?

- How has DCM notified property owners in the current Inlet Hazard Area that the setback factors are changing?

- The Proposed IHA Rule Changes and new setback calculations could result in a taking of private property if they completely prevent development of a parcel. For example, if a lot is 150' deep and its setback goes from 60' to 240'—it is unbuildable.

  The Proposed IHA Rule Changes may increase the CRC's exposure to takings claims. Such claims may arise because the Proposed IHA Rule Changes and setbacks would prohibit development within areas in which development is not currently prohibited. They may also arise where property owners who acquired or held their property with the expectation of being able to develop at a certain intensity are not satisfied with the limited development potential that the Proposed IHA Rule Changes would permit in protected IHAs

- The grandfathering provisions need to be expanded. The grandfathering protection the CRC Memo says would apply to all lots under 15,000 sq.ft. is not actually included in the Proposed IHA Rule Changes.

  The CRC Memo states that the Proposed IHA Rule Changes include provisions to grandfather all existing structures within the new IHAs as well as all lots under 15,000 square feet, platted after July 23, 1984 or before the effective date of the Proposed IHA Rule Changes, with respect to density restrictions. However, there is no language in the Proposed IHA Rule Changes that expressly grandfathers such lots.

- The cumulative effect of the Proposed IHA Rule Changes is to make an additional 1,819.7 acres of coastal land subject to development restrictions—in addition to expanding restrictions on existing parcels in the IHA. This will impact property values in a range of affected communities.

- The Proposed IHA Rule Changes imply a causal connection between the size of a structure, the number of units in a structure, and the size of a lot and the risk of erosion, flooding, and other adverse effects of sand, wind and water associated with dynamic ocean inlets. It is unclear, however, how the size of a home, the number of units, or size of a lot has any causal relationship to the risk of realizing hazards associated with dynamic ocean inlets.

- The revised rules will negatively impact property values and complicate potential sales and financing as a result of the "new" nonconforming status of the structures and parcels identified in the CRC Memo. To help alleviate the concern about making existing structures nonconforming, CRC could include a provision in the Proposed IHA Rule

Changes that would allow for reconstruction of nonconforming structures and structures on nonconforming lots without the need to come into compliance with current rules.

- Table 3 of the CRC Memo shows that, under the Proposed IHA Rule Changes, the number of lots within IHAs that do not meet the 15,000 square feet minimum lot size requirement more than doubles, from 894 lots to 1,805 lots.
- Similarly, Table 2 of the CRC Memo shows that, overall, the Proposed IHA Rule Changes would increase the number of structures with heated area greater than 5,000 square feet within or intersecting IHA boundaries from 24 to 41. Under the Proposed IHA Rule Changes, all such structures would be non-conforming with respect to the proposed maximum floor area allowance.

Thank you for the opportunity to provide comment.

Tyler Newman

President & CEO

BASE

Wilmington, North Carolina

Tyler Newman <tyler@ncbase.org>

(received via email: 2/28/2020)

India Mackinson <imackinson@ntbnc.org>

Town of North Topsail Beach

Daniel Tuman, Mayor
Joann M. McDermon, Mayor Pro Tem
Aldermen:
Mike Benson
Jerry Heid
Tom Leonard
Richard Peters

Bryan Chadwick, MPA
Town Manager

Laura Oxley, JD, MPA
Town Clerk

Nature's Tranquil Beauty

February 28, 2020

Ken Richardson
N.C. Division of Coastal Management
400 Commerce Ave.
Morehead City, NC 28557

Dear Mr. Richardson,

The Town of North Topsail Beach recognizes and appreciates the efforts of the Division of Coastal Management to maintain and preserve our beautiful coast. We understand the need to revisit IHA boundaries and the use of inlet hazard area erosion rates within the proposed new boundaries.

Attached you will find the Town's official public comment on the proposed update. You will also find a list of signatures and comments from 181 property owners and other stakeholders in support of the Town's comment.

Thank you for considering our comments and allowing our citizens' voices to be heard in this matter.

Sincerely,

Bryan Chadwick

Town Manager
Town of North Topsail Beach, NC

2008 Loggerhead Court
North Topsail Beach, NC 28460

ntbnc.org

Phone (910) 328-1349
Toll Free: (800) 687-7092
Fax (910) 328-4508

Public Comment for proposed CRC 2019 Inlet Hazard Area Boundary Update
Division of Coastal Management Public Hearing
Sneads Ferry Public Library
December 18, 2019
10:00 AM

We all appreciate the efforts of the Division of Coastal Management to manage our coastal resources and protect our coast. We understand the need to revisit IHA boundaries and the use of inlet hazard area erosion rates within the proposed new boundaries.

However, to prevent undue hardship on our residents and property owners, the Town of North Topsail Beach would like to request the following changes to the 2019 Inlet Hazard Area Boundary Update:

1. **Establish a more northern transect as the inlet-ocean transition boundary.** With transect-1345 as the proposed boundary, the update creates a long "toe," unnecessarily extending the Inlet Hazard Area at New River Inlet. Because of the minimal rate of change in the standard deviation used to calculate this boundary at transect-1345, we would like to request the inlet-ocean boundary moved closer to transect-1379. The erosion rate in this area is still within the Ocean Erodible AEC of 2 ft/yr.
2. **Exempt St. Regis Resort and Topsail Reef Condos from the update.** These structures, each with 240 units, have provided affordable housing since the early 1980s, giving North Carolinians of any means access to our beaches, which reside in the public trust. To preserve this access as much as possible, we request keeping these structures within the Ocean Erodible AEC and not within the Inlet Hazard AEC, since they both reside in an area with an erosion rate of 2 ft/yr.
3. **Clarify the rules on developing vacant lots.** We request that the rules on "grandfathering" of vacant lots for development be made clearer so property owners can better understand the impact of the update.
4. **Consider the impact on federal assistance.** With growing pressure from climate change, we cannot predict how FEMA will distribute assistance in coming years. We request the Coastal Resources Commission to commit to further researching the effect of an IHA designation before passing a potential barrier to disaster recovery on our coast.

2008 Loggerhead Court
North Topsail Beach, NC 28460

ntbnc.org

Phone (910) 328-1349
Toll Free: (800) 687-7092
Fax (910) 328-4508

5. **Clarify reasoning behind structure size limit.** Why was the structure size limit for new structures set at 5,000 sq ft versus say 7,000 sq ft in the updated boundary when the trend today is for large houses being built for extended families or vacation rentals?

Thank you for considering our comments and all your efforts in preserving our coast for future generations.

change.org

Town of North Topsail Beach

Recipient: N.C. Coastal Resources Commission

Letter: Greetings,

Town of North Topsail Beach 2019 Inlet Hazard Area Boundary Update Public Comment

2019 Signatures

Name	Location	Date
India Mackinson	US	2020-01-27
Susan Meyer	North Topsail Beach, NC	2020-01-28
Ashley Ford	Holly Ridge, NC	2020-01-28
Yolanda Gibbs	Mechanicsville, MD	2020-01-28
Brenda Decker	North Topsail Beach, NC	2020-01-28
Theresa Waldron	Richmond, VA	2020-01-28
Carol Frenkel	Cameron, NC	2020-01-28
Mark Veals	Winston-salem, NC	2020-01-28
Armand De Nuzzio	Franklinton, NC	2020-01-28
Andrea Huett	Cary, NC	2020-01-28
Lynne Grant	Raeford, NC	2020-01-28
Demetria Padgett	Wilmington, NC	2020-01-28
Alicia Martinez	Holly Ridge, NC	2020-01-28
Blain Cargile	Raleigh, NC	2020-01-28
Jill Gibson	Statesville, NC	2020-01-28
john saab	Royal Oak, MI	2020-01-28
Geegee Hillman	Blountville, TN	2020-01-28
Teresa Sasso	Lewis Center, OH	2020-01-28

Kathleen Scunziano	Raleigh, NC	2020-01-28
Gail DeNuzzio	Wake Forest, NC	2020-01-28

Name	Location	Date
Janet Pinette	Hampstead, NC	2020-01-28
Victoria Klink	Richlands, NC	2020-01-28
Crystal Morrison	Rutherfordton, NC	2020-01-28
Robin Shambarger	Jackson, NJ	2020-01-28
Matt Giri	Pinehurst, NC	2020-01-28
Janet Slocum	Freehold, NJ	2020-01-28
Maria Bavaro	N. Topsail, NC	2020-01-28
Pat Crosson	Jacksonville, NC	2020-01-28
Marsha Engel	Laurel, MD	2020-01-28
Ben and Nicole Bentrup	Jacksonville, NC	2020-01-28
Dot Dawson	Madison Heights, VA	2020-01-28
Zack Bennett	Wilmington, US	2020-01-28
Mikaia Jones	Charlotte, US	2020-01-28
Kellen Sahr	Cleveland, US	2020-01-28
peyton hess	Pekin, US	2020-01-28
Ahmad Robinson	West Orange, US	2020-01-28

Angelo Cuttaia	Oregon, US	2020-01-28
Dylan Young	Memphis, US	2020-01-28
Susan Allen	Fuquay Varina, NC	2020-01-28
Daurin Rodriguez	Providence, US	2020-01-28
Hunter C	Waterford, MI	2020-01-28
Jonah Ardoin	Milton, US	2020-01-28

Name	Location	Date
Anuj Patel	Hawthorne, US	2020-01-28
katelyn feige	kingsland, US	2020-01-28
Nicholas Kovach	Binghamton, US	2020-01-28
Fiona Smirl	Wellesley Hills, US	2020-01-28
bri sallee	Lexington, US	2020-01-28
Norma Beltran	Burbank, US	2020-01-28
Jermill Jordan	Milwaukee, US	2020-01-28
Nathan Serba	Danville, US	2020-01-28
Juan Gooseman	Lawrenceville, US	2020-01-28
Daniel Maltzman	Kansas City, US	2020-01-28
hunter lewis	Pikeville, US	2020-01-28
Olivia Bush	Doylestown, US	2020-01-28

Sam Irigoyen	New Lenox, US	2020-01-28
Timothy Pollion Jr	West Memphis, US	2020-01-28
Nathan Robles	Manassas, US	2020-01-28
Samiha Sarwar	Atlanta, US	2020-01-28
Alicia Powell	Lucas, US	2020-01-28
Alex Carlo	Mechanicsville, US	2020-01-28
cadence thorne	Lincoln, US	2020-01-28
Seth Jackson	Manchester, US	2020-01-28
Marie Kelley	Madisonville, TN	2020-01-28
Chris Lannerd	Miamisburg, US	2020-01-28

Name	Location	Date
Shia Maldonado	Clermont, US	2020-01-28
SOREN LEE	US	2020-01-28
Janak Vora	US	2020-01-28
Kyle Peters	Dayton, US	2020-01-28
Peyton Piersawl	Mount Sterling, US	2020-01-28
Ayden Rivera	Wylie, US	2020-01-28
Taneikwa Shaw	Bronx, US	2020-01-28
brayden paulson	Elk River, US	2020-01-28

Elianna Kassa	Minneapolis, US	2020-01-28
Terrance Carter	Elkridge, US	2020-01-28
Lanen Spotted Bear	Cut Bank, US	2020-01-28
chase Loy	Benton, US	2020-01-28
Indra Santana	Houston, US	2020-01-28
Brad Chaisson	New Orleans, US	2020-01-28
Brady Thompson	Alma, US	2020-01-28
Eric Rockefeller	Etna, US	2020-01-28
Brittany Aiello	Clayton, NC	2020-01-28
Julie Scunziano	Clayton, NC	2020-01-28
laura painter	Tarboro, NC	2020-01-28
Carol Woodie	Garner, NC	2020-01-28
Kimberly Willoughby	Garner, NC	2020-01-28
Marco Perez	Long Beach, US	2020-01-28

Name	Location	Date
Nathan Wu	New York, US	2020-01-28
Tomeja Toliver	Birmingham, US	2020-01-28
Joseph Milone	Brookfield, CT	2020-01-28
Rene Zavarei	Los Angeles, US	2020-01-28

Roy Quiambao	Bellflower, US	2020-01-28
Christian Avila	Berwyn, US	2020-01-28
Dean Guerrero	Manhattan Beach, US	2020-01-28
Miguel Hernandez	San Diego, US	2020-01-28
Robert Brown	Fitzgerald, US	2020-01-28
VN The King	Kansas City, US	2020-01-28
Amy Russo	North Topsail Beach, NC	2020-01-28
Josh Fullerton	Smyrna, US	2020-01-28
Kenny Combs	La grange, NC	2020-01-28
Jamal Ross	Cumming, GA	2020-01-28
Gerald Eidens	New London, NC	2020-01-28
Clayton Thomas	Hampstead, NC	2020-01-28
Thomas Dale	Pen Argyl, PA	2020-01-28
Melinda Schenkkan	Seaford, VA	2020-01-28
Pamela Thomas	Sneads Ferry, NC	2020-01-28
Erik Nefflen	Elkins, WV	2020-01-28
Carole MacQueston	Sneads Ferry, NC	2020-01-28
Brenda Payne	North Topsail Beach, NC	2020-01-28

Name	Location	Date

Sharif Hatoum	North Topsail, NC	2020-01-28
Lee Tinney	Wilmington, NC	2020-01-28
Emily Easter	Sneads Ferry, NC	2020-01-28
Austin Brock	Bloomington, US	2020-01-28
Aurelio Caceres	Atlanta, US	2020-01-28
Jeremy Grove	North topsail beach, NC	2020-01-28
Dana Werner	Burtonsville, MD	2020-01-28
Erica Pefley	Myrtle Beach, SC	2020-01-28
Sula Teachey	Goldsboro, NC	2020-01-29
Fedgeria Eidens	New London, NC	2020-01-29
Connie Fields	Rockingham, NC	2020-01-29
Joseph Scunziano	Atlanta, GA	2020-01-29
Britany GROVE	High Point, NC	2020-01-29
Lisa Minchew	Goldsboro, NC	2020-01-29
Phyllis Jones	Goldsboro, NC	2020-01-29
Maurice Brown	Colorado Springs, CO	2020-01-29
Brian Phinizy	Jamestown, NC	2020-01-29
Ricky Davis	Charlotte, NC	2020-01-29
Edward Craven	Liberty, NC	2020-01-29
Richard and Fallie Cecil	Lexington, NC	2020-01-29

Robert Diani	Littleton, NC	2020-01-29
Wendy Harris	Sneads Ferry, NC	2020-01-30

Name	Location	Date
Robert Holcomb	N Topsail Beach, NC	2020-01-30
Noreen Jekel	North Topsail Beach, NC	2020-01-30
Edward Jekel	New Bern, NC	2020-01-30
Toni Van Dongen	Columbiaville, MI	2020-01-30
Derek Soloway	Severn, MD	2020-01-30
Donna Kuegel	Jacksonville, NC	2020-01-30
Angela Sandlin	Jacksonville, NC	2020-01-31
Deborah Eller	Montvale, VA	2020-01-31
Irene He4nderson	Wilmington, NC	2020-01-31
Bruce Stewart	Kernersville, NC	2020-01-31
Cynthia D. Heil	Oakleaf Plantation, FL	2020-01-31
Thomas Gallagher	North Topsail Beach, NC	2020-01-31
Kathy Willey	Sneads Ferry, NC	2020-01-31
Anna Macy	Ocala, US	2020-01-31
Za Aa	New York, US	2020-01-31
Sami Khanom	Los Angeles, US	2020-01-31

Gaven Erevia	Yakima, US	2020-01-31
raha Gyjy	Washington, US	2020-01-31
amir alahverdi	San Francisco, US	2020-01-31
Cameron Collins	Cross, US	2020-01-31
Candace Britt	Houston, US	2020-01-31
Kristián Jalovec	New York, US	2020-01-31

Name	Location	Date
Ina Smirnov	Saint Louis, US	2020-01-31
Kevin Kildow	Eureka, US	2020-01-31
Sunni Weatherly	Kernersville, NC	2020-01-31
Constance Pletl	North Topsail Beach, NC	2020-02-01
Leaf Ericsson	Los Angeles, US	2020-02-02
Mike Cornell	Las Vegas, US	2020-02-02
brandie hensley	Somerset, US	2020-02-02
Jacqueline Andrade	Carbondale, US	2020-02-02
Dawn Long	North Topsail beach, NC	2020-02-02
Mike Benson	Sneads Ferry, NC	2020-02-02
CARMELLA Saab	Interlachen, FL	2020-02-02
Carmen Crespo	Newark, US	2020-02-02

Tammy Davis	Jacksonville, NC	2020-02-02
Cecelia Webb	Norfolk, VA	2020-02-04
Charles and brenda Traylor	Dover, NC	2020-02-05
Allie Ray McCullen	Clinton, NC	2020-02-05
Jeff Scott	Apex, NC	2020-02-06
KIMBERLY Sailer	North Topsail Beach, NC	2020-02-07
Craig Burnett	Rocky Mount, NC	2020-02-08
Suzanne Hendricks	Satellite beach,, US	2020-02-09
Robert Thirkelson	Palm Bay, US	2020-02-09
victor delacruz	Orlando, US	2020-02-14

Name	**Location**	**Date**
Richard Halsaver	North Topsail Beach, NC	2020-02-27
Jerry Heid	North Topsail Beach, NC	2020-02-27
Keri Simpson	Sneads Ferry, NC	2020-02-27
Ryan Hansen	NTB, NC	2020-02-27
Eve Williams	Whitakers, NC	2020-02-27
ROBERT Swantek	North Topsail Beach, NC	2020-02-27
Wayne Pace	North Topsail Beach, NC	2020-02-28

change.org

Town of North Topsail Beach

Recipient: N.C. Coastal Resources Commission

Letter: Greetings,

Town of North Topsail Beach 2019 Inlet Hazard Area Boundary Update Public Comment

2020 Comments

Name	Location	Date	Comment
Crystal Morrison	Rutherfordton, NC	2020-01-28	"We own unit 382 at Topsail Reef."
Kimberly Willoughby	Garner, NC	2020-01-28	"Homeowner at Topsail Reef"
Amy Russo	North Topsail Beach, NC	2020-01-28	"Homeowner at Topsail Reef"
Erik Nefflen	Elkins, WV	2020-01-28	"Topsail Reef Homeowner"
john saab	Royal Oak, MI	2020-01-29	"My future life is on the line, if the government won't support the north end in life, then there should never have allowed buildings to be built on the island in the first place, but now that they are. They need to support us"
Deborah Eller	Montvale, VA	2020-01-31	"Homeowner North Topsail Beach"
Bruce Stewart	Kernersville, NC	2020-01-31	"Own in North Topsail Beach"
Kathy Willey	Sneads Ferry, NC	2020-01-31	"Homeowner N Topsail Beach"

(received via email: 02/28/2020) Justin Whiteside <justin@oibgov.com>

oceanisle BEACH

February 28, 2020

Mr. Braxton Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

RE: Proposed Inlet Hazard Area Amendments

Dear Mr. Davis,

After reviewing the proposed amendments to the Inlet Hazard Area (IHA) and attending the February Coastal Resources Commission (CRC) meeting, we have a few concerns that are addressed below.

- Due to the majority of the east end of Ocean Isle Beach being platted prior to June 1, 1979, the new IHA boundary, inlet erosion rates, and proposed rules would create 72 unbuildable lots immediately upon implementation. 15A NCAC 07H .0104 provides setback relief for lots platted on or after June 1, 1979 and 15A NCAC 07H .0309(b) provides similar relief to lots platted prior to June 1, 1979. However, this relief is only for lots outside of the IHA. We would ask that these rules be consistently applied and that setback relief be permitted on lots located inside the IHA that were platted prior to June 1, 1979.

- 15A NCAC 07H .0308(b)(5) prohibits new dunes being created within the IHA. Dune building should be encouraged to protect public and private property whether that be inside or outside the IHA.

- The Town currently holds a Major CAMA Permit (107-16) to construct a terminal groin on the east end of the island adjacent to Shallotte Inlet. The groin location is within the proposed IHA boundary. The Town wants to ensure that the IHA boundary and associated inlet erosion rates will be reevaluated at least every five (5) years. The terminal groin should have a positive impact on erosion on the east end of the island which should reduce the annual erosion rates.

We would like to thank the staff for the time they have put into developing these rules and being open to dialogue to discuss other possible amendments. We would specifically like to thank Ken Richardson, Tancred Miller, and Tara MacPherson for coming to the Town and providing a presentation to our Board of Commissioners and the public.

Please feel free to reach out to us with any questions you have regarding our comments.

Sincerely,

Daisy L. Ivey
Town Administrator

Cc: Renee Cahoon, CRC Chair
Ken Richardson, Shoreline Management Specialist

TOWN OF OCEAN ISLE BEACH / 3 W. THIRD STREET / OCEAN ISLE BEACH, NC 28469
(910) 579-2166 / FAX (910) 579-8804 / WWW.OIBGOV.COM

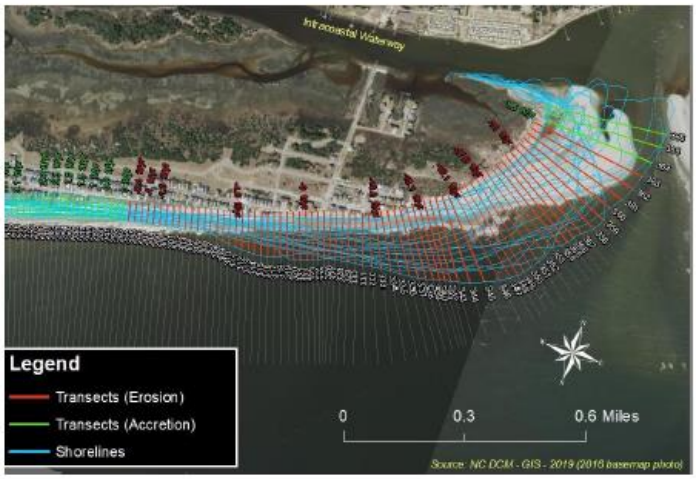
(received via email: 2/8/2020)

Mr. Richardson,

Per our conversation at the Ocean Isle Beach Workshop on January 9, attached is a replacement set of comments to the Inlet Hazard Area Boundary, 2019 Update.
These are to replace my earlier submission of January 2 so you should just delete those if that is allowed.
If any of these items require further clarification, please feel free to reach out to me.

Best Regards,
Earl Smith
(919) 225-1396
Earl Smith <dr.earl@frontier.com>

RESPONSE TO 2019 INLET HAZARD AREA BOUNDARY UPDATE



2/8/2020

Issues Regarding Science Panel Recommendations and Proposed Regulation Changes

Response to 2019 Inlet Hazard Area Boundary Update

ISSUES REGARDING SCIENCE PANEL RECOMMENDATIONS AND PROPOSED REGULATION CHANGES

ABOUT THE AUTHOR

Wilson Earl Smith received a Bachelor of Science from North Carolina State University in 1971 and a Master of Science and Doctor of Philosophy from Duke University in 1982 and 1989, respectively. His focus in his graduate studies was probabilistic modeling and practical application of those techniques to real world problems. He was employed at IBM Corporation for 32 years where he applied this knowledge and experience to hardware and software design of networking systems and servers. His specialty was system availability modeling and prediction and included design for fault mitigation and automated recovery from failures in computer based systems. He is credited with 8 U.S. Patents along with 12 Conference and Journal Publications. He served as a referee for IEEE conference and journal technical publications in his fields of expertise.

EXECUTIVE SUMMARY

Former New York Yankees baseball player and manager, Yogi Berra was renowned for his linguistic humor. One of his famous quotes was *"It's tough to make predictions, especially about the future."* As scientists and engineers, we are often confronted with those types of problems. Identifying the extent and likelihood of hazards for inlets in North Carolina and specifically at Ocean Isle Beach are particularly challenging tasks.

The team that makes up the Science Panel is highly qualified in their fields. In no way does this author pretend to match their inlet knowledge and experience. In fact, the descriptions and history of the various inlets in the report were found to be enlightening and informative. What he can offer comes from his engineering background in industry and academia and his ability to understand and critically review the materials.

Five issues are identified after extensive review of the Science Panel Recommendation document and the materials presented at the Ocean Isle Beach workshop on January 9, 2020. The first three issues are so fundamental that the public would be better served if they were fixed and the update process relaunched. On page 2, the specific issues are stated and briefly described. This is followed by detailed explanations for all five issues. Appendix A provides supporting details for Issue 3.

Response to 2019 Inlet Hazard Area Boundary Update

ISSUES REGARDING SCIENCE PANEL RECOMMENDATIONS AND PROPOSED REGULATION CHANGES

ABOUT THE AUTHOR

Wilson Earl Smith received a Bachelor of Science from North Carolina State University in 1971 and a Master of Science and Doctor of Philosophy from Duke University in 1982 and 1989, respectively. His focus in his graduate studies was probabilistic modeling and practical application of those techniques to real world problems. He was employed at IBM Corporation for 32 years where he applied this knowledge and experience to hardware and software design of networking systems and servers. His specialty was system availability modeling and prediction and included design for fault mitigation and automated recovery from failures in computer based systems. He is credited with 8 U.S. Patents along with 12 Conference and Journal Publications. He served as a referee for IEEE conference and journal technical publications in his fields of expertise.

EXECUTIVE SUMMARY

Former New York Yankees baseball player and manager, Yogi Berra was renowned for his linguistic humor. One of his famous quotes was *"It's tough to make predictions, especially about the future."* As scientists and engineers, we are often confronted with those types of problems. Identifying the extent and likelihood of hazards for inlets in North Carolina and specifically at Ocean Isle Beach are particularly challenging tasks.

The team that makes up the Science Panel is highly qualified in their fields. In no way does this author pretend to match their inlet knowledge and experience. In fact, the descriptions and history of the various inlets in the report were found to be enlightening and informative. What he can offer comes from his engineering background in industry and academia and his ability to understand and critically review the materials.

Five issues are identified after extensive review of the Science Panel Recommendation document and the materials presented at the Ocean Isle Beach workshop on January 9, 2020. The first three issues are so fundamental that the public would be better served if they were fixed and the update process relaunched. On page 2, the specific issues are stated and briefly described. This is followed by detailed explanations for all five issues. Appendix A provides supporting details for Issue 3.

Specific Issues:

1) Science Panel Recommendation Document Contains Multiple Errors, Omissions, Misstatements and Contradictions

Details of 7 significant document problems are provided. These are severe enough that the Science Panel Recommendation Document must be revised and updated. In its present form, it is not suitable as a reference document for any regulatory purpose.

2) IHAM Methodology Is Built on an Unstable Foundation

This illustrative example of the use of the IHAM methodology in Section 2.4 was intended to show how the methodology works to find the alongshore boundary of the Inlet Hazard Area (IHA). It reveals two things.

1. First, based on the alongshore boundary definition stated in the Executive Summary of the report, it is immediately apparent that the location identified as the boundary in the recommendation cannot possibly meet the criteria of that definition. There is a location that meets the definition.
2. Second, the example reveals a subtle invocation of a fourth, different boundary location definition in the recommendation. This one lacks disclosure and quantification. As such, it relies fully on modifications based on Science Panel professional knowledge. More importantly, such definition changes undermine the foundation on which the IHAM methodology is built.

This issue is explained in detail with diagrams. The definition of the IHA alongshore boundary location is foundational to the methodology and must be fully specified and followed.

3) IHAM Does Not Work as Claimed

The purpose of this latest recommendation from the Science Panel is to present the Inlet Hazard Area Method (IHAM) and revised IHA maps. The problem is that the methodology works without modification only about 1/2 of the time. The definition of the alongshore location of the inlet hazard boundary is executed by the IHAM methodology. The boundary setting process is incompletely specified and it depends heavily on the professional knowledge of the panel. That does not constitute a high quality, repeatable process. The IHAM must be fixed or replaced so that it works *"well at most of the inlets, requiring no additional modification"* as claimed.

4) Hybrid Vegetation Line

As communicated at the OIB workshop on January 9, 2020, the hybrid vegetation lines are only used for defining the landward extent of the IHA. However, the 30-Year and 90-Year Risk Lines from the HVL reference line and the related statements about them imply that they could be used later. So, it is unclear what stature those recommendations might have in the future if this report becomes a reference document. The document must clearly state that there are no recommended uses of the 30- or 90-Year risk lines or the HVL other than setting the landward extent of the IHA.

5) Recommendation for Updating Inlet Hazard Boundaries

The recommended 5 year updates should be adopted but a set of metrics that ensures a repeatable process must be determined and used.

DETAILED EXPLANATIONS OF ISSUES

Issue 1: Science Panel Recommendation Document Contains Multiple Errors, Omissions, Misstatements and Contradictions

The 2019 Inlet Hazard Area Boundary Update document provided for review is a particularly difficult document to digest. The following is a list of errors, omissions, misstatements and contradictions, and other problems that contribute to that difficulty.

1. In the scope of work presented to the Science Panel by the CRC as stated on page 5, three tasks are listed. Task number 2 states *"Re-evaluate points along the oceanfront shoreline where inlet processes are the dominant influence over shoreline position. "* As the document is organized, you are led to believe that the recommendations are based on the CRC task list but then you begin to discover that is not the case, at least not for task number 2.

2. The Science Panel seemed to understand task number 2 in Section 2.4 and clearly defines where the IHA boundary is to be placed. In its first sentence, it states *"The alongshore IHA boundary represents the location along the oceanfront shoreline where inlet related processes begin to have a **dominant** influence compared to other oceanfront processes."* Conceptually, dominance requires quantification of the oceanfront dynamics and placing the IHA boundary where those dynamics are either matched or cancelled by the inlet dynamics and that approach does answer the question of how much change signifies the boundary. The Science Panel then seemed to ignore the word dominant and began placing IHA boundaries at points that they identify where inlet hydrodynamics begin to have an influence over shoreline position but lack dominance. The methodology section claims that the methodology is doing one thing but the Science Panel, in fact, did something else.

3. The Science Panel evidently realized that inlet influence had to be defined. They moved from just defining IHA boundaries to be where the inlet begins to have influence on the shoreline to another definition on page 7 in the Executive Summary where it states *"The alongshore boundary of the IHA is identified by an **increase** in shoreline change variability compared to adjacent shoreline that is **not** influenced by the inlet."*. This establishes a reference point but never defines what represents an increase that defines the boundary location. The changing definition of the IHA boundary doesn't end there. As you work through the example of the use of IHAM in section 2.6, you discover yet another definition subtly embedded. There, the Executive Summary stated definition is altered and the IHA boundary location becomes the transect that represents a sharp change in both plotted lines representing LRR and shoreline variability (Standard Deviation). In the example, the Science Panel uses professional knowledge to modify the boundary based on LRR without any explanation in the inlet discussion. How this use of LRR 'to a lesser degree' is done and what it means and when it is

significant enough to make a difference are not disclosed. As a result, this has to be considered a case where IHAM does not work without modification as the Science Panel expertise is invoked.

4. The contradiction between CRC task #2 and boundary definitions is further evidenced as Section 2.4 proceeds to use an incorrect interpretation of figure 6. The figure caption states *"For this location, transect-291 (vertical dashed line) represents a sharp change in both plotted lines."* To then *state "To the right of transect-291, the shoreline is dominated by inlet hydrodynamics, and to the left it is dominated by oceanfront processes."* is a false claim. This is confirmed on page 30 of the recommendation document where it correctly states *"Inlet transect-291 is the boundary along the oceanfront shoreline where inlet processes start to affect the shoreline's position (Figure 17)."*

5. Further in the document, you see that Figure 6 is the same as Figure 17 for the East End of Ocean Isle Beach except that Figure 17 has another error in that the Oceanfront and Inlet labels are reversed. The process breaks if there is confusion on where those are located.

6. The documentation in the methodology section is lacking. The graphs such as Figure 17 serve to quantify what is visually evident in pictures like the companion Figure 16. LRR is described in detail but that is not the metric used for identifying the alongshore boundary.

    a. Standard Deviation is named by both IHAM step 3 and the definition in the Executive Summary as being used to identify the location of the alongshore IHA boundary. That must be described in the same detail as LRR explaining how the calculation is actually performed with shoreline data. The document doesn't provide that information nor does it state what smoothing or other manipulation is done with the data and it must include those details.
    b. The methodology section does not state how LRR is to be used 'to a lesser degree' than standard deviation in boundary setting.
    c. The standard deviation clearly amplifies what is seen in Figure 16. The standard deviation line in Figure 6 only appears useful in identifying a range of transects that might be the boundary where inlet influence begins. From there, you need to examine transect data values. Even then, there are no quantifiable and measureable characteristics or features that directly point to boundary locations. It only states *"The alongshore boundary of the IHA is identified by an increase in shoreline change variability compared to adjacent shoreline that is not influenced by the inlets."* No amount of change or any other value is provided for precisely identifying the location. It sounds like any positive change is correct lacking more explanation but smoothing is in play. Small, random changes may appear and some random movement may be acceptable. This all needs to be addressed.

7. LRR and Standard Deviation are misaligned in Figure 17 due to data skewing. At the alongshore IHA boundary, the LRR averaging is skewing the data and transferring erosion rate towards the oceanfront shoreline transects where much less erosion is in play. This is obvious because there is a problem with the graph of LRR and Standard Deviation observed in Figure 17 and possibly other places with such sharp changes. There is only one point where inlet influence begins so the point where inlet influence begins should be indicated in the same place by both lines. It is not and understanding this difference is fundamental to properly apply the proposed methodology.

   In section 2.3, the document states that *"Once computed, the linear regression rate was then smoothed as described previously for the HVL (Figure 2); but instead of averaging 5 transects, a 17-transect running-average alongshore was used."* This method was adopted from shoreline position smoothing. The misalignment occurs, at least in part, because the Standard Deviation of shoreline position should be minimally affected by a shoreline smoothing algorithm whereas the LRR line will be most affected where sharp changes such as Figure 17 are observed as you are doing running averages over a quarter mile distance. One of the very features that may be useful to identify the boundary transect is made inaccurate due to data skewing using the 17 transect smoothing algorithm. In the vicinity of the sharp change in LRR in Figure 17, that sharp change in the LRR line will be a smoothed line and begin showing a greater erosion rate than the actual rate for that transect by itself. At transect-295, for instance, this rate appears to be about 50% worse than the measured rate for that transect alone. When this is happening, LRR should not override standard deviation. An approximation of the correction for this is added to Figure 1 in this document for illustration.

As to the usefulness of the report, it is inconceivable that a document that delivers recommendations that deviate from the assigned task, states multiple differing and conflicting versions of the alongshore IHA boundary definition, omits methodology details and fundamental explanations and makes erroneous statements should be advanced without corrections. It will be even more egregious to reference such a flawed document for any proposed regulatory purpose.

Resolution of this issue requires a revised and corrected version of the recommendation document that accurately states the task performed, the definitions used, explanations for each transect chosen as a boundary and complete methodology descriptions. It also requires that data shown in various figures be consistent or the reasons for differences explained paying particular attention to things like *"the effect of various running averages in smoothing transect points alongshore"* as listed in the Recommendations section.

Issue 2: IHAM Methodology Is Built on an Unstable Foundation

In the Methodology Chapter, Section 2.4 labeled 'Using Standard Deviation of Shoreline Position to Identify the Alongshore IHA Boundary', it states ***"Figure 6, which plots the alongshore variation in the Standard Deviation and the LRR, illustrates the methodology that was used."*** (Figure 6 is also Figure 17 for the Shallotte Inlet at Ocean Isle Beach.)

The methodology was developed to execute step 3 of the IHAM that is stated on page 13 *as "Use the standard deviation to define the alongshore extent of inlet influence. "* The IHAM methodology must embody the definition of the IHA alongshore inlet hazard boundary and on page 7 in the Executive Summary, it further defines that boundary location:

*"The alongshore boundary of the IHA is identified by an **increase** in shoreline change variability compared to adjacent shoreline that is **not** influenced by the inlets."*

In section 2.4, it states *"The standard deviation of shoreline position is a measure of the extent of shoreline variation (i.e., the back and forth movement of the shoreline) at each transect."* Notice that the alongshore variation in the erosion/accretion rate (LRR) is not mentioned in the above definition of alongshore boundary location.

Using the above definition and standard deviation metric, it is a counter to the definition for the alongshore IHA boundary to be at any location identified as having decreasing shoreline variation compared to shoreline that is not influenced by inlets.

A problem is evident as soon as you look at Figure 6 in the recommendation. Figure 1 below is the same figure with annotation. From the above definition, you know immediately that the identified transect-291 is incorrect because it has **decreasing** shoreline change variability compared to the adjacent shoreline that is not influenced by the inlets. This is indicated by the negative slope of the standard deviation line at that location and the negative slope exists from about transect-275 and continues all the way to the sharp change location. On that basis, the boundary cannot possibly be located anywhere on that side of the sharp change using the standard deviation line.

Where should the boundary be located in the illustration? Using the standard deviation metric and the definition on page 7 of the recommendation, the alongshore boundary is found by

1. locate the sharp change in the standard deviation,
2. determine the standard deviation on the side away from the inlet where shoreline is not influenced by the inlet.
3. move in the direction of the inlet and find the point where standard deviation starts increasing relative to the standard deviation from step 2; that is the boundary location.

In Figure 1 below, you can see these steps identified. The sharp change for Step 1 is labeled. In this example, you can pick most any point to the left of the sharp change to extract the standard deviation on the side away from the inlet where shoreline change is not influenced by the inlet. Then, you

proceed toward the inlet until you find an increase in standard deviation as compared to the ocean shoreline standard deviation noted in step 2. That is the boundary.

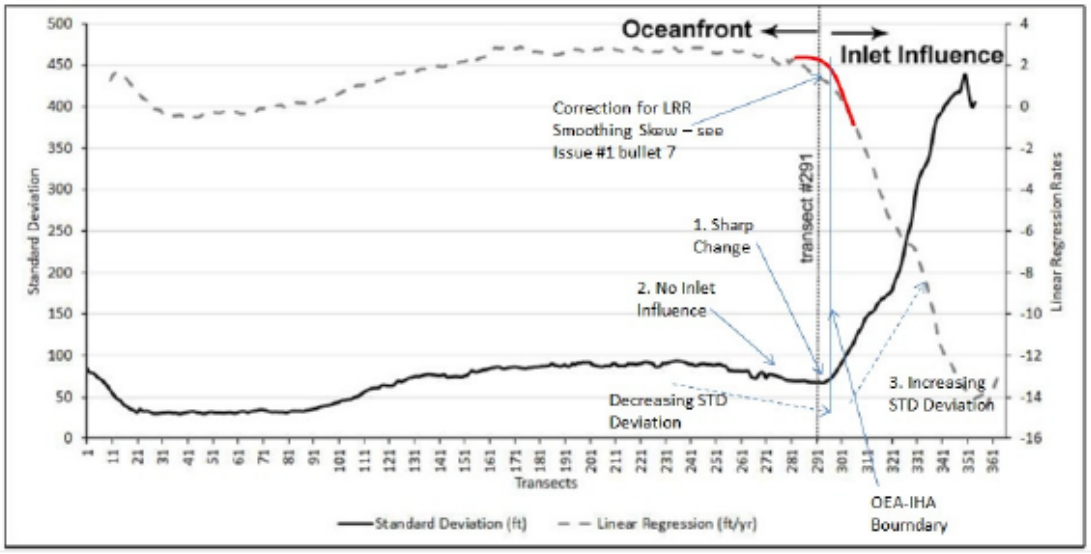


FIGURE 1 FOLLOWING THE ILLUSTRATION OF THE IHAM PROCESS STEPS FOR ISSUE 2 - ALSO: REFERENCE FOR ISSUE 1.7

For step 3, you cannot identify the specific boundary transect solely from this graph. You must examine the standard deviation data. Figure 2 gives us a visual to locate increasing transect standard deviation. Starting within the adjacent shoreline that is not influenced by the inlets and moving towards the inlet, the variation in shoreline change is constant to decreasing all the way to the sharp change in the standard deviation line.

You can see this from the length of the lines spanning the shoreline in Figure 2 below. The standard deviation begins to increase as denoted by the longer lines beginning after transect-295. (The actual values are not included in the report but the relative lengths tell us what we need to illustrate the incorrectness of transect-291 as the boundary.) In reality, the amount of increase that must occur is an essential value that should be established in order to precisely set the boundary as the boundary definition only says the standard deviation must increase relative to the standard deviation determined in step 2.

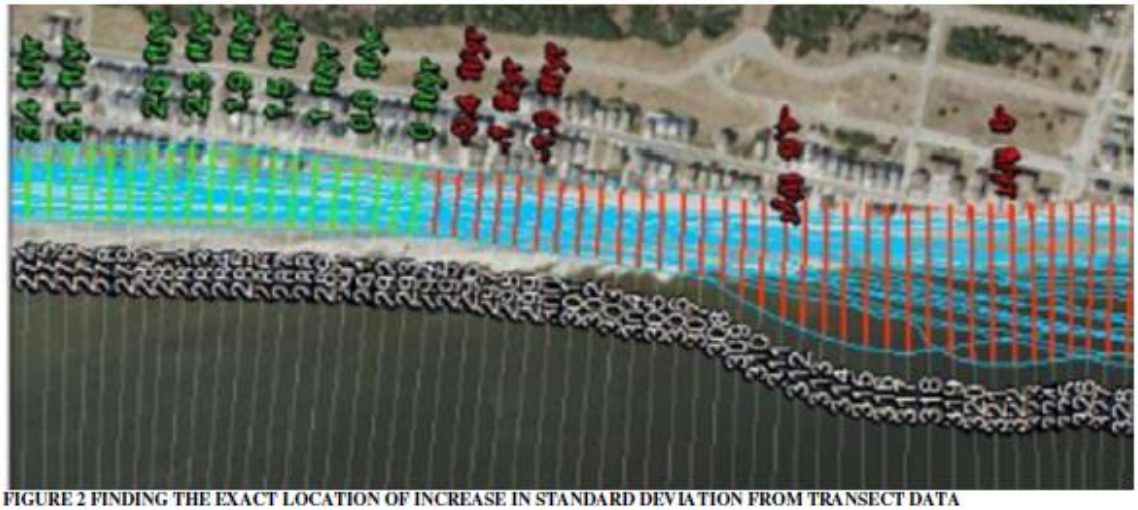


FIGURE 2 FINDING THE EXACT LOCATION OF INCREASE IN STANDARD DEVIATION FROM TRANSECT DATA

It is worth noting that on page 20 in section 2.6 entitled 'Modifications to the Computed Inlet Hazard Area', it is stated in the first sentence that *"The IHAM as described above worked well at most of the inlets, requiring no additional modification."* That begs the question of why is transect-295 not identified by the Science Panel? Were there modifications by the Science Panel?

Section 2.6 continues with a list of potential reasons for modifications, none of which appear to apply at this inlet. Then it states at the beginning of the last paragraph *"In these cases, the Panel used their professional knowledge of each inlet to aid in the delineation of the IHA boundaries."* The last sentence then states *"Specific details are provided in the descriptions for each of the inlets."* (if they made modifications).

When you go to page 30 in Section 3.2a labeled 'Ocean Isle Beach side of Shallotte Inlet', there is a statement that shoreline data beginning in 1933 was used in Figures 16 and 17. Otherwise, it simply states *"Inlet transect-291 is the boundary along the oceanfront shoreline where inlet processes start to affect the shoreline's position (Figure 17)."* with no other explanation. Since no mention is made of any Science Panel professional knowledge adjustments to get to that location, it is fair to assume that there were none (If any existed, they would be published as done elsewhere).

Based on this, transect-295 or one to the right of it is the correct location for the OEA-IHA boundary using the IHAM methodology. At this point, it must be assumed that the example illustrated by Figure 6 in section 2.4 (which is also Figure 17 in the recommendations) was picked because it was considered to be an easy, straightforward and self-explanatory use of the methodology showing how the IHAM worked well at most of the inlets, requiring no additional modifications as stated on page 20.

How, then, did transect-291 become the recommendation? The above application of the methodology does not lead to that location. By definition of the boundary, it cannot be there. Then, you discover a

statement in Section 2.4 *"For this location, transect-291 (vertical dashed line) represents a sharp change in **both** plotted lines."* and realize that yet another definition of the boundary location has been invoked. Then you understand the statement earlier in that section that reads *"this boundary was identified by using the standard deviation of shoreline position and, to a lesser degree, the alongshore variation in the erosion/accretion rate (the LRR) between transects."*

This is problematic for the IHAM methodology because that is not the definition that is disclosed in the Executive Summary of the report as the one that is used. The Science Panel has documented application of a fourth instance of the moving definition of the IHA alongshore boundary as depicted in Figure 3 (see also, Issue #1) as being used at this inlet. The alongshore boundary location definition is foundational to the methodology and the stated definition in the Executive Summary is not being followed.

There is no guidance given on how LRR is used to a lesser degree. Here, the Science Panel apparently decided that the LRR difference between the transects of less than 1 ft./year is so significant that the IHAM determination based on shoreline variation does not work and should be discarded. If that is the case, it may be time to own up to weakness of the IHAM methodology and start over.

The Science Panel seems oblivious to the data skewing (See Issue #1) that has been introduced with the 17 point data smoothing of LRR. When you correct for the data skew, that small LRR difference observed should mostly disappear. Anything left is quantified in inches and possibly not discernable. It contains the noise of measurement errors and other data collection and processing factors. LRR should not override IHAM results based on shoreline variability, at least not at this location.

This use of LRR most certainly qualifies as a professional knowledge adjustment of the Science Panel which they promised in the document to disclose in the discussion of the inlet boundaries at the locations but failed to discuss it there in this instance. If this particular adjustment is necessary at all, it just reiterates that it is time to find another methodology.

FIGURE 3 MOVING DEFINITIONS OF IHA BOUNDARIES

It is extremely troubling that a transect that cannot possibly meet that definition of the alongshore IHA boundary location as articulated in the Executive Summary is identified as that boundary in the recommendations. It is not fair to say that this is a minor difference. It is a difference of 100 meters or more in the placement of that boundary, more than the length of a football field, and it affects at least a dozen property owners. To them, this difference that is placing them in the IHA is a very major and personal difference and a very major issue.

It is easy to identify two possible causes for this boundary recommendation.

1. The first and most logical is that someone did not apply the methodology correctly. It certainly looks like the methodology could work and the boundary at transect-295 would work equally as well as the one identified.
2. The second and more catastrophic possible cause is that it illustrates that the IHAM methodology does not actually work at all in most cases without Science Panel modification. It certainly did not work as applied by the Science Panel here and promoted as a defining example to illustrate its use.

If the methodology is to be used, it must be a process that executes the task as defined and provides valid, reasonable and repeatable outcomes regardless of who uses it. This means that it must have a stable alongshore boundary definition and be fully specified so that it produces the correct results.

Resolution of this specific issue requires

1) relocation of this boundary recommendation to transect-295 or farther toward the inlet in the example (Figure 6) and for the Shallotte Inlet at Ocean Isle Beach (Figure 17) and appropriate explanations if another transect is used
2) addition of documentation and implementation of augmented process procedures to ensure that the methodology produces valid results both now and at each 5 year update to the boundaries.
3) Specifications and bounds of the use of LRR to supplant the indicated boundary using Standard Deviation must be defined and documented else the use of 'LRR to a lesser degree' must be removed from the recommendation and relegated to the category of professional knowledge modifications.

Issue 3: IHAM Does Not Work As Claimed

In Section 1.1 on page 10, it states *"The purpose of this report is to present that new methodology, the Inlet Hazard Area Method (IHAM), and to recommend revised IHA boundaries for the ten active and developed tidal inlets in North Carolina."* The IHAM is the basis now for the revised IHA boundary recommendations. IHAM has five steps and is cited with regard to many tasks. For instance, at the OIB side of Shallotte Inlet, a reference is made to *"the 90-yr Risk Line mapped using the IHAM"*.

When the claim is made on page 20 that *"The IHAM as described above worked well at most of the inlets, requiring no additional modification."*, it indicates that step 5 is not usually required. That step is *"Use professional knowledge of inlet processes, geomorphology and engineering activities to modify the IHA as needed. "* However, when you read the report and compile what was actually done, you find that the results of the IHAM methodology must be modified much more often than not when identifying the alongshore boundary of the IHA (step 3) described in Section 2.4.

Referring to the tables provided in Appendix A at the end of these comments, you see that, in 5 instances, the transect chosen for the IHA alongshore boundary was successfully identified using the IHAM methodology. Issue 2 above describes an additional instance where the IHAM methodology should have worked if applied according to the definition of the boundary in the Executive Summary. That would be the 6th successful use. While no explanation was provided, the boundary at the Shallotte Inlet on Holden Beach should have been considered a modification to the boundary and explained.

In reality, of the 18 locations where Inlet Hazard Areas are recommended, only about 6 locations actually use the IHAM methodology with no modifications to locate the alongshore IHA boundary. All of Masonboro Island is included in the IHA so no alongshore boundaries exist at those 2 locations. At the 10 other locations, it was the Science Panel applying their input that made the final determination. This certainly does not justify the claim made on page 20 of working well at most inlets without modification.

The fact that professional knowledge was used to modify or shape the alongshore IHA boundary determination at more than half of the locations is an issue. The IHAM methodology just does not work by itself and the actual boundary decisions were really made by the Science Panel in the majority of instances.

In industry, Six Sigma processes were developed to eliminate defects for products. Those same concepts were adapted to decision making processes to assure high quality, repeatable outcomes. The fact that the Science Panel professional knowledge is so often employed indicates that the process using the IHAM methodology is either incompletely specified or it can never work as claimed.

If it is possible to augment the IHAM methodology to work, the idea is that each decision uses quantifiable and measureable characteristics to ensure consistency of action. The IHA alongshore boundary setting process needs to determine additional quantifiable and measureable characteristics related to the IHA alongshore boundary task. These are more than transect specific LRR or standard deviation numbers. They are relative metrics that define how to select the correct boundaries. These characteristics encapsulate the knowledge of the Science Panel at a level that can be applied by anyone using the methodology.

As a simple example, you might use *"The alongshore boundary of the IHA is identified by* an increase in shoreline change variability compared to adjacent shoreline that is not influenced by the inlets." as stated on page 7. Then, recognize that changes of some small amount or less are not significant relative to the overall standard deviation at that location due to smoothing or measurement error but changes of some larger amount or percent constitutes the boundary location. So, as you move between transects at the location of the sharp change, you know precisely which transect is the boundary.

Additionally, relative metrics will help to ensure that the boundaries make sense with respect to other defined areas adjacent to the IHA. They will also ensure that the IHA identifies risks that are significantly different from those adjacent areas. An example might be that the inlet hazard boundary is never placed at a location adjacent to the OEA where LRR>-2 on an eroding shoreline unless there is another parameter defined that justifies that choice.

If the IHAM methodology can be salvaged, Science Panel professional knowledge must be converted into measureable and quantifiable attributes that will then produce the same boundary recommendations from identical inputs, regardless of who uses the process. That process will be repeatable.

Once the parameters are characterized, the goal would be that only those parameters need to be revisited on the 5 year update schedule and the IHAM methodology performs the update utilizing the new parameter values with few if any modifications by the Panel.

In summary, the IHAM is the featured change and heart of the recommendations for Inlet Hazard Areas. Its methodology is clearly under achieving and causing the IHAM to fall short of the claims made in the Science Panel recommendation. Its ability to identify IHA boundaries is so low that professional knowledge is more often used than not to make modifications to the Inlet Hazard boundaries. The professional knowledge of the Science Panel is not part of a repeatable process and the IHAM methodology must be augmented so that it encapsulates that knowledge or it must be replaced.

In its present state, the IHAM is not providing an acceptable rate of successful usage in setting the alongshore boundaries without professional knowledge modifications.

Issue 4: Hybrid Vegetation Line

A concept of a Hybrid Vegetation Line is included in the Science Panel recommendation. This is an issue for several reasons.

First, the HVL corrupts the use of the existing vegetation line as purely a reference point. Instead, it incorporates an additional risk offset into that reference line potentially making some but not all areas subject to stricter regulations without further due process. The recommendation document must state that the recommendations do not include replacing the existing vegetation line with the HVL.

Second, the Science Panel reported that *"Away from inlets, the existing vegetation line is a useful reference feature for the long-term erosion trend."* The Science Panel does not specify how far away from the inlets the location must be in order to retain existing vegetation lines. Instead, HVL is indicated on the entirety of the proposed IHA. The document should be specific on this point.

Third, on page 11 of the Science Panel report further states *"This report recommends similar 30- and 90-Year Risk Lines to define the IHA at each inlet. "* In the executive summary, they state *"Because inlet oscillations make the existing vegetation line a poor indicator of future conditions, the proposed boundaries are fixed relative to the Hybrid-Vegetation Line."* The report states *"Within the IHA, the 90-Year Risk Line is used to define its landward extent"* It also states *"The 30-Year Risk Line is an intermediate line that defines a higher level of risk closer to the shoreline."* The 30- and 90-Year Risk Lines relative to the HVL look too similar to the same setbacks relative to the existing vegetation line. The inclusion of 30- and 90-year risk lines in Figure 18 on page 34 for the East End of Ocean Isle Beach

as well as at other locations in the report raises concerns that once this document becomes the reference for regulations, those risk lines could be imposed for other purposes without further due process with regard to the HVL itself.

In the workshop of January 9, 2020, it was specifically stated that the HVL was only used as a reference line in determining the landward boundary of the IHA. It was also stated that the HVL was not included in any proposed regulatory changes such that it would replace the existing vegetation line as now used as the reference line for determining minimum setbacks for building or rebuilding purposes and that the 30- and 90-year risk lines shown with respect to the HVL are not to be used for regulatory purposes.

However, on page 43 of the recommendation document, the alongshore boundary at the Oak Island side of Lockwood Folly Inlet was placed with a reference to the HVL. Here, it states *"An accretionary dune feature exists centered around transect-63 and the visible landward dip in the HVL ending at transect-70. Transect-70 is recommended as the IHA boundary to include the accretionary dunes influenced by the inlet."* This would indicate that the HVL is becoming a consideration in things that will amount to regulatory use and the inclusion of that concept in this recommendation document will become the justification for those other uses.

There are a lot of unknowns associated with the HVL. The Science Panel did not appear to use the same screening methods for the HVL that they published that they used for other portions of the study (for instance, excluding any observations within a year of a major storm). There appear to be no rules regarding when a section of shoreline is added or removed from the HVL. In general, there is insufficient detail provided for anything other than setting the landward extent of the IHA and the HVL must be expressly limited to that use only.

Issue 5: Recommendation for Updating Inlet Hazard Boundaries

Natural phenomena rarely exhibit any behavior that is purely linear. If you are predicting something that depends on linear behavior, especially for a 'relatively' long period, you are more likely to be proved wrong than correct. A classic example is a hurricane track. A linear model using speed, time and current position will be reasonably accurate for a few hours to a couple of days but miss the mark by significant distance by the 4th and 5th days.

Linear regression is simply a method of using observed data points to create a linear model of a point (transect) along the shoreline. It relates the current shoreline position to a previous positions by assuming a constant erosion or accretion rate. This, in turn, can be used to predict future shoreline positions. Figure 5 in the proposal provides an example of a best fit Linear Regression for a transect that is constantly eroding, in this case, for 45 years. A linear representation of shoreline change implies no acceleration or deceleration of change from one year to the next over that 45 year period. But long

term linearity is unlikely because natural systems seek equilibrium and adjust in non-linear ways. Natural, climatic and human factors can all cause erosion rates to accelerate, decelerate or change direction. The linear regression models may become increasingly inaccurate with time and the most recent data is needed to adjust the model.

On page 7, *"the Science Panel on Coastal Hazards recommends that the CRC consider updating subsequent IHA boundaries every five years, to coincide with updates to oceanfront erosion rates and Ocean Erodible Area boundaries."* This Panel recommendation for 5 year updates is realistic, proper and necessary but, to provide real value, it must be coupled with a usable methodology and repeatable process.

Conclusion

The following five issues are submitted for consideration.

1. The 2019 Update: Science Panel Recommendations to the North Carolina Coastal Resources Commission is flawed, containing numerous errors, omissions, misstatements, contradictions and recommendations that are not consistent with the claims in the methodology section. It is not suitable as a reference in its current state and must be revised and corrected.
2. Use of the IHAM methodology is illustrated by its use at the Shallotte Inlet at Ocean Isle Beach but the alongshore IHA boundary is selected using a modified version of the definition of the boundary location that is stated in the Executive Summary. The recommended boundary is clearly misplaced and can never be correct based on the stated definition. This is easily seen when you work through the example in the methodology section. The invocation of the LRR at that location as done by the Science Panel is ill advised. The recommended boundary location must be revised to the one indicated by standard deviation. Otherwise, this is yet another indication that the IHAM methodology does not work without professional knowledge modifications by the Science Panel. Implementation of augmented process procedures is required to ensure that the methodology produces valid and repeatable results.
3. The Inlet Hazard Area Methodology does not work as claimed. On page 10 of the recommendation document, one of the stated purposes was to show the new IHAM which is claimed to work well at most inlets without modification which is step 5 of the IHAM. Instead, the report itself shows IHAM methodology for setting alongshore inlet hazard area boundaries as working without modification at less than half of the locations. The others require Science Panel professional knowledge modifications. This could be indication of an incompletely specified process. If the IHAM boundary setting methodology cannot be fixed to work more frequently, it must be replaced as it is at the heart of the entire set of recommendations and critical to support the 5 year update cycles.
4. Hybrid Vegetation Lines were reported in the workshop to be only used for setting the landward extent of the Inlet Hazard Areas. There is concern that other uses are documented in the recommendations. Any other use besides setting the landward IHA boundaries must be clearly excluded by the recommendation document as the HVL itself and those other proposed uses must be subject to regulatory due process at the affected locations.

5. Use of linear regression models appears reasonable but those models require 5 year reviews, a repeatable process and metrics that define precisely how to set boundaries. Then, the IHA alongshore boundaries can be properly reset and Inlet Hazard Areas updated to changing conditions.

Appendix A: Methodology Use

"The alongshore boundary of the IHA is identified by an increase in shoreline change variability" (i.e., standard deviation) "compared to adjacent shoreline that is not influenced by the inlets."
– Executive Summary p. 7

IHAM Boundary Methodology Use

"The IHAM as described above worked well at most of the inlets, requiring no additional modification." p.20

Methodology actually used without modification in only 5 to 7 of 16 instances

Color codes: Green = worked, no modification;
Orange = should have worked;
Red = did not work without modification

Inlet Location	Sharp Change Transect	Identified Boundary Transect	Graph Indicated Transect	Increasing STD Dev wrt Shoreline w/o Inlet Influence?	Notes
Tubbs – Sunset Beach	212	210	212	NO	Sharp Change Transect is 212; Std. Dev. Decreases from 210 to 212
Tubbs – Ocean Isle	28	28		YES	
Shallotte – Ocean Isle	295	291	295	NO	Sharp Change Transect is 295 – no lower numbered transect meets boundary definition so boundary should be 295 – no explanation – See Issue #2
Shallotte – Holden Beach	176	170		YES	Needs explanation. Professional knowledge modifications made.
Lockwood Folly – Holden Beach	514	477		YES	Standard Deviation Increases from 50' at 477 to 75' at 514, hardly a radical difference. From 514 to 535 the Std Dev. changes by 135'. With Std. Dev. Alone, the beginning of the 135' change is location. However, here the LRR is greater than 2 ft/yr beginning about 477; possibly due to inlet currents?; this is professional knowledge modification and should be explained

Color codes: Green = worked, no modification;
Orange = should have worked;
Red = did not work without modification
Black = N/A

Inlet Location	Sharp Change Transect	Identified Boundary Transect	Graph Indicated Transect	Increasing STD Dev wrt Shoreline w/o Inlet Influence?	Notes
Lockwood Folly – Oak Island	41	70	41 to 53	NO	Result does not meet boundary definition. Explanation says inlet influence to transect 85. Graph shows nearly constant Std. Dev. Line from 53 upward at about 50' Reference to HVL at transect 70. This call is purely professional knowledge modification with explanation.
Carolina Beach Inlet – Carolina Beach	1267	1267		YES	
Carolina Beach Inlet – Masonboro Island	210	None		NA	No alongshore boundaries determined– All of Masonboro Island deemed in IHA
Masonboro Inlet – Masonboro Island	501	None		NA	No alongshore boundaries determined – All of Masonboro Island deemed in IHA
Masonboro Inlet – Wrightsville Beach	16	12		YES	Deviated from IHAM based on professional knowledge modification and explanation is given
Mason Inlet – Wrightsville Beach	258	258		YES	
Mason Inlet – Figure 8 Island	11	45	25	NO	Erosion Risk – Boundary based on professional knowledge modification with explanation

Color codes: Green = worked, no modification;
Orange = should have worked;
Red = did not work without modification

Inlet Location	Sharp Change Transect	Identified Boundary Transect	Graph Indicated Transect	Increasing STD Dev wrt Shoreline w/o Inlet Influence?	Notes
Rich Inlet – Figure 8 Island	???	181		NA	Sharp change indeterminate – LRR and Science Panel professional knowledge modification with explanation
Rich Inlet – Lea-Hutaff Island	63	None		NA	Science Panel professional knowledge modification with explanation
New Topsail Inlet – Lea-Hutaff Island	210	None		NA	Science Panel professional knowledge modification with explanation
New Topsail Inlet – Topsail Beach	27	42		NO	Science Panel professional knowledge modification with explanation
New River Inlet – North Topsail Beach	1345	1345		YES	
Bogue Inlet – Emerald Isle	81	81		YES	

(Received via US Postal Service: 02/27/2020)

December 15, 2019

Mr. Ken Richardson, Specialist of Shoreline
NC Department of Environmental Quality
Ken.richardson@ncdenr.gov.
217 West Jones Street
Raleigh, NC 27603
1-877-623-6748

Dear Mr. Richardson,

Thank you for your work and interest in protecting the beach shoreline of North Carolina. I own a property at 2386 New River Inlet Rd, North Topsail Beach, NC. I have a story to tell in how I acquired this piece of property located on the ocean. I will not go into the story but stress activity I witness can have some material effect on the beach and shoal development from current flows to sand (beach) accumulation.

First and foremost the beach vessel dredging the inlet should not destabilize the natural accumulated shoal which developed some 50 yards from inlet formation. Sand dredging should be pumped toward the beach and not toward the rip current which

carries sand hundreds of yards from its natural formation area which protects against erosion. Inlet stabilization needs addressing but hard structures create additional problems and its expensive.

When I built this home myself, I invented a baffle system which is portable and its has the potential to stabilize the inlet. The CRC should consider the system as a tool in helping with the problems. It would be helpful in all 20 counties. The CRC would have to monitor the maintence of the system and it could be helpful statewide.

Thank you,

George Vann

cc: members

(received via email: 03/01/2020)

Ken Richardson
Shoreline Management Specialist
NC Division of Coastal Management

Dear Mr. Richardson,

Thank you for your work to protect our coast from unwise development. I have a question and a comment about the proposed 2019 expanded IHAs at Holden Beach. The workshop you conducted here on January 16 was very helpful. The question below is one I asked that day that you said you needed to clarify.

In an IHA, the maximum density is 1 unit per 15,000 square feet. The proposed IHA on the east end of Holden Beach will take in vacant 5,000 square-foot lots that were platted in 1937. Will these lots be grandfathered so that a single family house still can be built on each one of the lots (assuming they meet the setback requirement and all other requirements)?

As you could tell at the workshop, the proposed IHA for the west end of Holden Beach has a lot of people upset. I understand. It is shocking to see an IHA stretching along 2.3 miles of our beach, including across a stretch that has the lowest risk of erosion on the island.

Inlet Hazard Area Boundary, 2019 Update, section 2.6 (page 20), states that while the IHAM worked well for most inlets, "the IHA defined for some inlets required additional modifications based on how well the computed IHA fit the unique character of each inlet." There were instances where the science panel did not rely solely on the standard deviation method to determine the alongshore boundary of the IHA. The Holden Beach side of Shallotte Inlet should have been one of those instances. The fact that the ebb channel alignment of Shallotte Inlet has been favorable for Holden Beach for over a half century should have carried great weight. While other oscillating inlets have oscillated back and forth over the last 50 years, something has been keeping Shallotte Inlet in a favorable alignment for Holden Beach. I think the existing IHA on the west end of Holden Beach does not need to be expanded at this time.

With the support of my wife Denise, and my brother David and his wife Jennifer, I developed Dunescape subdivision on the east end of Holden Beach. Our goal was to balance development with preservation of natural beauty. We made the lots large (58 single family home sites on 86 acres), so that a meaningful portion of each lot could remain in its natural state. We made our inlet-front lots very deep, and required the houses to be further back than the state setback. I believe in strong regulations to protect our coast. But I fear the proposed IHA on the west end of Holden extends so far away from the inlet, and across a stretch of beach that has been stable or accreting for so long, that it damages DCM's credibility with a lot of people.

Thank you for your consideration,

John M. (Jay) Holden
111 Dunescape Drive
Holden Beach, NC 28462
910-846-3193 (Jay and Denise Holden holden3@ec.rr.com)

(received via email: 03/01/2020)

WARD AND SMITH, P.A.

ALEX C. DALE, Attorney at Law

127 Racine Drive
University Corporate Center (28403)
Post Office Box 7068
Wilmington, NC 28406-7068

P: 910.794.4806
F: 910.794.4877
acd@wardandsmith.com

February 28, 2020

VIA EMAIL
(DCMcomments@ncdenr.gov)

Braxton Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

RE: Comments – Inlet Hazard Area updates
Our File 954082-00003

Dear Director Davis:

We represent Figure "8" Beach Homeowners' Association, Inc. ("Association"). We submit these comments and questions with regard to the Inlet Hazard Area updates:

1. The enlarged Inlet Hazard Areas will encompass numerous single-family residential structures that exceed 5,000 square feet total floor area, as well as undeveloped lots that would accommodate these larger homes. We do not understand why 15A NCAC 07H .0310(a)(4) needs to be revised to limit development in the Inlet Hazard Areas to only structures less than 5,000 square feet total floor area. The prior language allowed any residential structure of four units or less and only limited non-residential structures to less than 5,000 square feet total floor area. The proposed rule change on this issue appears to be an unnecessary, new restriction. The proposed rule changes are recommended based on the need to enlarge the Inlet Hazard Areas and to improve the methodology for establishing Inlet Hazard Areas, but this size limitation does not match the reasoning behind the new recommendations.

2. In the "Summary of Proposed Inlet Hazard Area Amendments" section of the Memorandum from Ken Richardson, Shoreline Management Specialist, to the Coastal Resources Commission dated February 7, 2019, Mr. Richardson indicates that there is a desire for all existing structures to be grandfathered into the new IHAs and that "new and expanded

construction" would be limited to 5,000 square feet of heated space. This grandfathering concept should be expressly stated or more fully addressed. This is warranted because of the new limitation in 15A NCAC 07H .0310(a)(4) that only structures less than 5,000 square feet total floor area are "allowed" within the IHAs. While this section deals with permitted "development" within the IHAs, and N.C. Gen. Stat. § 113A-103 exempts any maintenance and repair (but not replacement), a scenario could occur where the grandfathering language would be necessary to protect (i) the structures that exceed the new total floor area limitation or (ii) other improvements on lots with structures that exceed the new total floor area limitation.

3. Section 3.6(b) of the *Inlet Hazard Area Boundary, 2019 Update: Science Panel Recommendations to the North Carolina Coastal Resources Commission* discusses the Figure Eight Island side of Mason Inlet. It states that "the Panel agreed that the risk related to the inlet actually extended further north" than the IHAM identified inlet-ocean boundary. The IHAM identified inlet-ocean boundary was transect-31, but the proposed IHA extends to transect-45. Other than an unexplained comment in a table that there is an "increased potential for erosion at Mason Inlet-Figure Eight Island," we do not understand why the proposed IHA is extended beyond the IHAM identified inlet-ocean boundary. Other inlets that have proposed IHAs that deviate from the IHAM include explanations for the deviation (such as the explanation with regard to the Figure Eight Island side of Rich Inlet on page 72). This shift from transect-31 to transect-45 is not explained with regard to the Figure Eight Island side of Mason Inlet. The IHAM should be followed at this location.

Thank you for your consideration of these comments.

Yours truly,

Alex Dale

Alex C. Dale

ND: 4825-9115-4613, v. 1
cc: Figure "8" Beach Homeowners' Association, Inc.

(*received via email: 03/02/2020)*

I attended the meeting at Holden Beach on January 16. The meeting did little to answer my questions about why this was being done at the West End of Holden Beach and what problem you were trying to solve. I urge you to carefully read the letter sent by our town manager David Hewitt. I have attached a copy. I agree with the contents of this letter. Our town also hired a consultant to comment on the analysis done by your department. I urge you to read this as well.

What you are proposing to do at the West End of Holden Beach is based on opinion not facts. I especially want to draw your attention to David's comments regarding the use of standard deviation. In the meeting on January 16 I became aware of just how you were applying standard deviation. To apply standard deviation to a set of data showing steady consistent accretion makes no sense. It is not a normal data distribution. If I used linear regression on the same data I would arrive at a much different conclusion.

Please read the information and letters from our Town Manager. Our town has been proactive over the years in building very responsibly. As a result of the town's proactive actions, building has not been permitted beyond the street side toe of the dune. We do not need this expanded IHA on the West End with all its associated negative implications on marketability and insurance.

Sincerely
Peter Corbett
404 2907517
Peter Corbett <petercorbett.atlanta@gmail.com>

(Ken Richardson NOTE: "*information and letters from Town Manager" (Holden Beach)* referenced in comments from Mr. Corbett are already included as separate comments/concerns).

(received via email: 03/02/2020)

Mr. Davis and Mr. Richardson,

My family has owned property at Holden Beach for more than 25 years, and I am writing to oppose changes that have been proposed to the inlet hazard area boundaries. In the time that my family has owned property in the 900 block, we have seen significant ***accretion*** of sand to the oceanfront. Because it does not appear as if this accretion was taken into account in the proposed IHA designation, I believe that the proposed IHA is inaccurate and its passage would have an undue, unnecessary, and prejudicial effect on homeowners in this area of Holden Beach.

Additionally, it does not appear as if adequate notice was provided to property owners at Holden Beach as to whether their property will be affected by the proposed changes in the IHA boundaries; how their property value will be impacted; and whether their property will be subject to any grandfathering provisions.

Finally, I am concerned that the DCM has not thoroughly considered the comments and recommendations of the Town of Holden Beach, its engineer, and its property owners.

I respectfully request that the DCM abandon the proposed updates to the existing IHA boundaries. Thank you for considering my request.

Joanne Allen
Joanne Allen <egjja1@verizon.net>

(received via email: 03/02/2020)

From: Roessler, Todd [mailto:TRoessler@kilpatricktownsend.com]
Sent: Monday, March 2, 2020 2:12 PM
To: Ken Richardson (kenrichardson@ncdenr.gov) <kenrichardson@ncdenr.gov>
Cc: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>; 'Doc Dunlap' <docdunlap@gmail.com>; 'Robert Sheahan' <robert@coastal-luxe.com>; 'Neil Wright' <nwright@barnettandwright.com>; Greg Finch (gfinch@lmgroup.net) <gfinch@lmgroup.net>
Subject: [External] IHA Comments - The Point OIB, LLC

Please find attached comments on behalf of The Point OIB, LLC regarding the proposed Inlet Hazard Area boundaries and rules. Following your review of the attached comments, we would like to schedule a meeting with DCM to further discuss potential effects of the proposed rules on the development. Thanks for your consideration.
Todd

KILPATRICK TOWNSEND
ATTORNEYS AT LAW

KILPATRICK TOWNSEND & STOCKTON LLP
www.kilpatricktownsend.com

Suite 1400, 4208 Six Forks Road
Raleigh, NC 27609
t 919 420 1700 f 919 420 1800

direct dial 919 420 1726
direct fax 919 510 6121
TRoessler@KilpatrickTownsend.com

March 2, 2020

Via First Class Mail and Electronic Mail

Ken Richardson, Shoreline Management Specialist
North Carolina Division of Coastal Management
400 Commerce Avenue
Morehead City, North Carolina 28557
Ken.Richardson@ncdenr.gov

Re: Comments Regarding Proposed Inlet Hazard Area Amendments

Dear Mr. Richardson:

I am writing on behalf of The Point OIB, LLC ("The Point OIB") to provide comments in response to the proposed amendments to the Inlet Hazard Area ("IHA") regulations. The Point OIB has proposed a residential development at the eastern end of Ocean Isle Beach. If adopted as proposed, the amendments to the IHA boundary and regulations will significantly impact this fully-permitted, proposed development. For the reasons discussed below, The Point OIB respectfully requests, that the Coastal Resources Commission: (i) confirm that the size of each lot has vested, and the 15,000 square foot minimum lot size would not apply to the development; (ii) amend 15A NCAC 7H .0104(a)(4) to increase the maximum structure size to 5,000 square feet in total floor area and a structure footprint of no more than 2,500 square feet; and (iii) meet with The Point OIB to further discuss the proposed IHA regulations and potential effects on the proposed development.

The Point OIB has proposed an approximately 60-acre residential development at the eastern end of Ocean Isle Beach. On September 18, 2015, The Point OIB purchased the property for $4.1 million. The proposed development is currently located in an area designated Ocean Erodible Area ("OEA") and is outside the current IHA. The proposed development consists of 45 residential lots ranging in land area from approximately 5,100 square feet to 15,700 square feet (with all the lots except two being 10,000 square feet or less). The proposed development has obtained local, state and federal permits, including a CAMA major permit (Permit # 59-18), a U.S. Army Corps of Engineers General Permit 291 Verification (Action ID Number SAW-2015-00751), North Carolina Division of Water Resources 401 Water Quality Certification (DWR Project: 2017-0959), State Stormwater Management Permit No. SW8 171115, NPDES Construction General Stormwater Permit NCG01000, an approved erosion and sedimentation

control plan, Wastewater Collection System Extension Permit No. WQ0039065, and Extension of Authorization to Construct Serial No. 17-00166. On September 27, 2016, the Town of Ocean Isle Beach (the "Town") initially approved the preliminary subdivision plat; on February 11, 2020, the Town approved a revised preliminary subdivision plat. The Point OIB has invested nearly five million dollars in the proposed development, including purchasing the property, permitting, engineering, financing, and salaries. In addition, The Point OIB has incurred substantial expenditures in reliance of these valid approvals for the proposed development.

As an initial comment, the proposed IHA boundary changes and regulation amendments do not take into account local efforts to address erosion and local requirements. With respect to the eastern end of Ocean Isle Beach, the U.S. Army Corps of Engineers has authorized a terminal groin. Along with a concurrent beach fill project, the terminal groin is designed to allow sand to continue to flow around and over the structure. Modeling supports that this sand will continue to be transported to the east of the structure, and beach renourishment (and sandbag revetments) would no longer be necessary at the eastern end of the island. If monitoring indicates that the area east of the terminal groin is impacted above certain thresholds, the terminal groin would be modified to allow more sand to move past the structure or additional sand would be placed in this area. In addition to these measures to address erosion at the eastern end of the island, the Town manages development in a responsible manner, including limiting the location, density and height of structures. *See* Town Code Chapter 30 – Flood Damage Prevention Regular Coastal Phase, Town Code Chapter 50 – Subdivisions, and Town Code Chapter 66, Article II Zoning Districts.

If the proposed boundary change and regulations go into effect as proposed and unless grandfathered or some other exception applies, the final regulations will have a number of inequitable effects on the proposed development. First, the vast majority of lots (39 of 45) would be located in the new IHA. Currently, none of the lots are within the existing IHA. Second, actual inlet erosion rates (10.5 feet/year and 13 feet/year) would be used to calculate new inlet setback factors rather than applying the current adjacent OEA setback factor (6.5 feet/year). Third, residential structures would be limited to 5,000 square feet or less. Fourth, because the vast majority of lots would be located within the new IHA, existing IHA regulations would impact the proposed development. For example, unless certain rights have vested, development density would be limited to no more than one unit per 15,000 square feet of land area. Even if the grandfathering provision of 15A NCAC 7H .0104 is triggered (most of the lots that would be within the new IHA could not meet the new inlet setbacks) and the setback factor in effect at the time of plat approval was applied, structures would be limited to no more than 2,000 square feet in total floor area.

As a result of obtaining all local, state and federal permits and incurring substantial expenditures in good faith and reliance of these valid approvals and the harm that would be incurred, the proposed development has certain vested rights. First, as part of the CAMA major permit application, the developer submitted its preliminary subdivision plan showing each lot's location and size. As a result, this right has vested, and even if the IHA boundary is adopted as proposed, the lot size would not be limited to 15,000 square feet. Second, to the extent that the grandfathering provision of 15A NCAC 7H .0104 would apply, The Point OIB respectfully requests that the regulation be amended as follows:

(a) Development on lots created on or after June 1, 1979 shall utilize the current erosion rate setback factor in the calculation of the development setback pursuant to 15A NCAC 07H .0304. If application of the current erosion rate setback factor in the calculation of the development setback would preclude the placement of permanent buildings, then the erosion rate in effect at the time that the lot was created may be utilized in the calculation of the development setback, provided that the development:

(1) shall comply with the current erosion rate setback factor to the maximum extent possible;

(2) is located at the landward most position of the lot without violating local zoning requirements;

(3) shall extend no further oceanward than the landward-most adjacent building; and

(4) shall be no more than ~~2,000~~ 5,000 square feet in total floor area and the footprint of the structure shall be no more than 2,500 square feet.

(b) Development on lots created prior to June 1, 1979 shall comply with the provisions of 15A NCAC 07H .0309(b).

15A NCAC 7H .0104 was initially promulgated in 1979 and subsequently amended. While in the past it may have made sense to limit the square footage of a structure to 2,000 square feet, it is now feasible to move larger structures. In fact, if a project is located in an ocean hazard Area of Environmental Concern, which includes IHAs, the permit applicant must complete and sign an AEC Hazard Notice recognizing certain natural hazards and agreeing to relocate or dismantle the structure if it becomes threatened by erosion and the shoreline does not recover within two years. Existing (and proposed) regulations limit structure size in IHAs to 5,000 square feet, implicitly recognizing that structures can be relocated or dismantled. 15A NCAC 7H .0310(a). Further, Town Code Section 66-45 limits the height of residential structures allowing construction of two floors limited to 31 feet in height. Thus, there is no basis to limit structure size to 2,000 square feet under the grandfathering provision of 15A NCAC 7H .0104.

We look forward to working with the Division of Coastal Management and the Coastal Resources Commission to promulgate amended IHA regulations that protect the public and the environment and allow permitted development to proceed in a responsible manner.

Sincerely,

Todd S. Roessler

cc: Doc Dunlap
Robert Sheehan
Neil Wright
Jimmy Bell
Greg Finch

(received via email: 03/02/2020)

From: Seth Palmer [mailto:spalmer@ncrealtors.org]
Sent: Monday, March 2, 2020 2:31 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: [External] NC REALTORS Comments re: 15A NCAC 07H.0304-.0310

Braxton,

Please find the attached comments submitted on behalf of NC REALTORS regarding the Commission's currently rulemaking action.

Let me know if you have any questions.

Thanks,
Seth

Seth Palmer | Director of Regulatory Affairs and External Communications
NC REALTORS®
3801 Computer Drive, Suite 104 | Raleigh, NC 27609
T: 919.573.0992 | 336.294.1415 | C: 910.367.8934
www.ncrealtors.org

***NOTE:** initial letter from Mr. Seth Palmer was revised and replaced, and is included below*

From: Seth Palmer [mailto:spalmer@ncrealtors.org]
Sent: Monday, March 2, 2020 9:29 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>
Subject: Re: [External] NC REALTORS Comments re: 15A NCAC 07H.0304-.0310

Thanks, Braxton. Apologies for the multiple emails but please use the attached document as the official comments from NC REALTORS. The original included an extraneous word.
Thank you,
Seth Palmer | Director of Regulatory Affairs and External Communications
NC REALTORS®
3801 Computer Drive, Suite 104 | Raleigh, NC 27609
T: 919.573.0992 | 336.294.1415 | C: 910.367.8934
www.ncrealtors.org

March 2, 2020

Braxton Davis
North Carolina Coastal Resources Commission
400 Commerce Avenue
Morehead City, NC 28557

Dear Chairwoman Cahoon and Members of the North Carolina Coastal Resources Commission,

On behalf of the more than 48,000 NC REALTORS members across all 100 counties, thank you for your work protecting one of our state's most valued resources. We have appreciated the opportunity to work with the Commission over the years on protecting the state's coastal areas while also supporting the rights of property owners and tourists alike.

In our review of your proposed changes to 15A NCAC 07H.0304, .0306, .0309, and .0310, we applaud the work of the Science Panel to do such a thorough review of the state's inlet hazard areas (IHA). We have multiple concerns regarding the impact that the rules will have on property owners in these areas.

First and foremost, we have concerns about the notification that has been conducted to potentially affected property owners. While there have been multiple public hearings, we have received concerns from members in affected areas that property owners whose properties may be negatively impacted if these new rules we to go into effect. In the spirit of full engagement, we would encourage the Commission to consider this type of engagement prior to approving these rules. This should include but not be limited to full written communication to all potentially affected property owners informing them of potential impacts to their property.

We also have significant questions regarding the ability for a property within an IHA to be build or rebuilt given the changes made to setback requirements in 15A NCAC 07H.0310. Many of the lots in coastal areas would be rendered unbuildable based on the calculations of usable land remaining given the overall lot size in many areas.

Additionally, we have some concerns about the applicability of the square footage requirements allowed within IHAs given the restriction that those limitations would place on the rebuilding of properties in the new area boundaries. We have also found challenges in the establishment of square footage parameters in the ocean hazard areas, especially pertaining to multi-family properties which have provided us with additional pause in this circumstance. We are also extremely concerned about properties being allowed to fall into noncomforming status which will cause their value to decrease significantly and limited their ability to recive financing or insurance.

ncrealtors.org

Greensboro | 4511 Weybridge Lane | Greensboro, NC 27407 | 336.294.1415
Raleigh | 3801 Computer Drive | Suite 104 | Raleigh, NC 27609 | 919.856.9155

Finally, we are concerned that the ambiguity in the grandfathering provisions of the rules does not allow for any protection of previously conforming properties. While we recognize the Commission's intent to hold all properties to the new standards for continuity, it is important to have grandfathering provisions in any rules affecting properties to ensure that a complete prohibition on their reconstruction is prevented. We feel that more study is needed to ensure that the ambiguity is reduced and that the removal of the provisions in 15A NCAC 07H.0309(c) do not have an unnecessary impact on property owners.

For these reasons, as well as those articulated by other property owners in the affected areas, we request that the Commission direct additional study into this issue and allow for further comment before they seek final adoption of these proposed rules.

Please do not hesitate to contact me if you have any questions regarding the positions articulated here.

Thank you for your time and consideration.

Sincerely,

Seth Palmer
Director of Regulatory Affairs and External Communications
spalmer@ncrealtors.org

(received via email: 03/02/2020)

Attached are my comments regarding proposed changes to the Inlet Hazard Areas.

Vicki Myers
301 Ocean Blvd. West
Holden Beach, NC 28462
vymyers@gmail.com
704-517-4280

VICKI YOUNGER MYERS

March 2, 2020

To Whom It May Concern,

I am writing to express my concerns about the proposed changes to Inlet Hazard Areas. These changes will have a profound impact on my island. I take issue with the following:

IHAM: The Inlet Hazard Area Method (IHAM) does not accurately reflect the trends for an accreting shoreline. The west end of Holden Beach has been accretionary for over 50 years yet the Inlet Hazard Area is proposed to expand to approximately 2.5 miles from the inlet. Using the standard deviation to determine change on an accreting shoreline without regard to whether the change is positive or negative, essentially penalizes these shorelines for accreting. As the beach width continues to grow the standard deviation increases.

Holden Beach has a robust shoreline management plan which includes extensive renourishment. The down-drift portion of the beach picks up some of this sand including areas in the proposed IHAs. Because of this, using IHAM to determine IHAs is inaccurate. Based on this method the IHA on Holden Beach at the Shallotte Inlet will need to continue to expand as more sand migrates westward. It should be noted that Holden Beach completed a major renourishment effort of 1.3Mcy in January 2017. This sand is equilibrating and migrating westward. The study period for IHAM ended in 2016.

In addition, the regression analysis should show a positive line slope because the beach is accreting. Without the actual data it is impossible for the public to verify these calculations.

Different inlets are treated inconsistently. Inlets that were highlighted in the report for their variability and therefore at increased risk had IHAs actually shrink with the proposed changes and the proposed IHAs are considerably smaller than the proposed IHA on Holden Beach's Shallotte Inlet. Graphing of the standard deviation and the regression analysis varies by island. Without the data used it is impossible determine how this was calculated, however if the axis's scales are adjusted the correct transect location to determine the IHA would be approximately 45, not 170.

FISCAL ANALYSIS: There are several material inaccuracies and errors within the document which should be corrected, for example Table 5 in the report. The impact on each town should be considered, not the state as a whole. Your proposals have negatively impacted some communities very severely, yet by combining the data with other areas in the state the impact is muted. By placing limits on what can be constructed or rebuilt after storms or fires you have decreased the value of the lots and existing structures. By declaring these properties to be in a "hazard" area you have decreased the resale value.

The Fiscal Analysis did not document the impact on the communities' tax bases. By creating unbuildable and nonconforming properties communities will see a decrease in their tax base. On Holden Beach, designating a 2.5-mile-long IHA over the most valuable part of

301 OCEAN BOULEVARD WEST • HOLDEN BEACH, NC • 28462
PHONE: 704.517.4280 • EMAIL: VYMYERS@GMAIL.COM

the island will impact the tax base. Your actions will cause an increased tax rate and/or cause less funds to be available to protect the island as a whole.

COMMUNICATIONS: Your proposed actions will have a major impact on Holden Beach yet you have not reached out to impacted property owners. Even today, the Comment Period is not listed on the CRC website under Public Notices and Hearings, where the public would look to find information on commenting. I pointed this out at the December 17 Public Hearing and the January 16 meeting at Holden Beach and was assured both times that it would be corrected. It has not been.

In addition, though your directive states that you will work with communities while developing the proposed IHAs this has not happened.

OVERALL CONCERNS: These proposed changes are not in keeping with your stated objectives:

> "One of the CRC's management objectives is to ensure that development is compatible with natural characteristics of coastal areas while also minimizing the likelihood of significant loss of private property and public resources (NCAC 07H.0203)."[1]

By placing the western most 2.5 miles of Holden Beach in an IHA you are directing future development away from this part of the island. In reality, this part of the island is the least likely to see losses due to erosion or storms.

Members of the Science Panel continue to state that the west end of the island is expected to erode, with no reason given. The only change coming to the inlet is the construction of a Terminal Groin on Ocean Isle Beach. If this is the expected cause of the erosion it should be clearly stated.

REQUEST: I request that you postpone action on IHA changes until further study is done on the IHAM method. Please consider using modeling to confirm your recommendations. Please work with local communities so that your recommendations are accurate and well communicated. Please update the Fiscal Analysis to correctly reflect the impact your changes will have on our communities.

Sincerely,

Vicki Younger Myers

---

[1] Taken from CRC 19-24 "Consideration of Fiscal Analysis for the Inlet Hazard Area Boundary Update and Rule Amendments to 15A 7H .0304, 07H .0306, 07H. 0309 and 07H .0310" memorandum, Ken Richardson, September 4, 2019.

(received via email: 03/02/2020)

Braxton,
Attached are my IHA comments and other related documents.
Regards,
Renee McCullen
Renee McCullen deekrm@yahoo.com

Renée McCullen
Durham, NC

March 1, 2020

Via Email: Braxton.davis@ncdenr.gov
Mr. Braxton Davis, Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

Dear Braxton,

Thank you for the opportunity to provide the CRC with feedback around the proposed IHA boundaries and development rules. My partners and I own the undeveloped south end of Topsail Beach at New Topsail Inlet.

At the February 28, 2019 CRC meeting during the public comment section, I expressed my concern that the HVL concept was more appropriate for oscillating inlets and it doesn't work with long standing migrating inlets. Thank you, Commissioner Baldwin, for asking Science Panel member Spencer Rogers if the Science Panel considered looking at Topsail Beach differently.

The response was the Science Panel did look at it differently by limiting the time frame to 1984 – 2016 vegetation lines. Ultimately, they selected the 1984 vegetation line as the HVL as it was the most landward. 1984 is 35-year-old data that has been used by the Science Panel as the HVL for over 10 years in other reports without any change to account for the continuing migration.

My feeling is the Science Panel doesn't look at Topsail Beach with the level of differentiation needed to fairly and accurately represent risk. This inlet displays consistent migration, but has the furthest inland sited HVL, 30YRL and 90 YRL in the entire IHA study at more than one half mile inland from the end of the island. The placement of these lines make Topsail Beach appear to be the riskiest inlet in the state and that clearly isn't an accurate assessment. Oscillating inlets throughout the state pose the greatest risk with well documented loss of streets and homes due to inlet processes. That is not the issue at Topsail Beach.

The IHAM doesn't define a specific time period to review other than the goal was to map the landward-most position of all vegetation lines which better fits oscillating inlets. Documented evidence proves the landward most vegetation line at Topsail Beach historically would go as far inland as Surf City. Obviously, using a vegetation line that far inland didn't make sense. Therefore, the Science Panel used the IHAM provision to utilize professional judgement in determining the vegetation time frame selected. When you look at the entire body of work by the Science Panel on HVL at other inlets throughout the state, the placement of the HVL at New Topsail Inlet unreasonably overstates risk compared to the placement of the HVL at other inlets. My understanding after following the IHA discussion for over a decade is that oscillating inlets pose the greatest risk to development. According to the 2019 IHA Boundary Update on page 7, "The dynamic oscillations near inlets were found to be better represented by a fixed, Hybrid-Vegetation Line based on the most landward limits of all vegetation lines over the study period."

One of the many examples of the risk disparity is at the opposite end of Topsail Island at New River Inlet at North Topsail Beach where NTB is on the eroding side of a migrating inlet. The Onslow Beach side is the migrating side similar to Topsail Beach, but it wasn't included in the study since it is part of Camp Lejeune. The North Topsail Beach HVL is 250 feet or less from the end of the island and the 90 YRL is less than a quarter of a mile from the end of the island. Compare this to Topsail Beach's lines that fall over one-half mile inland. (See attached maps for comparison.) The IHA report discusses on page 86 that during the past 25 years chronic erosion has been the norm at North Topsail Beach which has resulted in more than 3,000 feet of the shoreline near and on the inlet to require sandbag revetments. In fact, the Topsail Reef condos and some houses are partially in front of the HVL. Again, this is not the situation at Topsail Beach. I encourage the CRC members to review other inlet maps to get a sense of the risk disparity depicted between Topsail Beach and other inlets. The scale varies so you will need your ruler.

The Science Panel in the IHA report recommends on page 7 fixed IHA development boundaries like the HVL be used for the setback line. This calls to question, why the largest undeveloped tract of land adjacent to an inlet which has historically migrated 6.2 miles has the furthest inland sited HVL placed over one half mile inland from the inlet. At the February 2019 meeting in response to Commissioner Baldwin's question, Spencer Rogers went on to say that at the 5-year IHA update the HVL will probably move approximately 450 feet toward the inlet which will be indiscernible on a map. Why is the potential HVL revision projected to move only slightly?

I respectfully request that the CRC consider asking the Science Panel to revisit their selection of Topsail Beach's HVL so that the risk portrayed there isn't grossly overstated compared to the other inlets in the state. In the last 40 years since the first IHA boundaries were established, the island has accreted almost 170 acres. Using 1984 as the HVL places the majority of our property below the 30-year risk line which suggests the property is going to disappear. This is a contradiction to history and doesn't reflect the low risk associated with past development at Topsail Beach. Anytime risk is defined on a map it needs to reflect reality as there could be unintended consequences. Attached is a map of various vegetation lines that could be considered as HVL alternatives, along with historical images of Topsail Beach for perspective. I understand that it is difficult to find one method that works for all inlets, but a better method than the one used needs to be applied to Topsail Beach's HVL so that the stated risk reflects reality.

Other IHA Feedback:

- In the past there was some discussion of changing the name of the IHA to Inlet Management Area which seems more appropriate as the actual degree of hazard varies in each area.
- I fully support the IHA setback be measured in a landward direction from the first line of stable natural vegetation, the static vegetation line or the measurement line whichever is applicable.
- There are sounder environmental approaches to develop the very few remaining IHA undeveloped areas without limiting it to one unit per 15,000 square foot lot and structures less than 5,000 square feet. There are other concepts that would result in larger areas of open space surrounding the perimeter of a property like ours and/or throughout the property. I think the IHA rules should leave it up to the developer and municipality to formulate a solution that works best in their community. Outside the IHA this is standard practice. In the situation of Topsail Beach, the Land Use Plan stipulates that only low-density development is permitted in the area our property is located. Plus, by removing the size requirements many of the grandfathering concerns around the newly incorporated areas into the IHA would be eliminated or reduced.
- If I understand 15A NCAC 07H .0310 (b) correctly, why are sand fences, beach accessways and unenclosed, uninhabitable gazebos with a footprint of 200 square feet or less not allowed seaward of the IHA setback requirement if landward of the vegetation line, etc. in the IHA as they are permitted in OHAs? I certainly understand the exclusion of the other items listed in 15A NCAC 07h .0309 (a), but there should be some consideration for the above items to be included.
- As I understand it the Science Panel is tasked with providing the CRC with scientific information so the CRC can consider the information in rule making. The Science Panel is not to be involved in the actual rule making process. Whereas, the CRAC is to provide the local government perspective and advice to the CRC regarding rules. When there are members from the Science Panel on the CRAC doesn't that ultimately give the Science Panel a voice in any future rule making? Plus, it can potentially cause the other CRAC members to defer to the Science Panel members opinions due to their scientific background and limit open discussion? It seems to me the roles would be clearer if members were either on one or the other.

Based on the CRC and Science Panel meetings I've attended over the last decade, much effort has gone into finding the best methodology to use in the management of the IHA. The IHAM seems to work in most inlets, but as it relates to New Topsail Inlet at Topsail Beach, further refinement is needed. I do hope that CRC will consider reevaluating the placement of the HVL at Topsail Beach which grossly overstates the risk relative to other inlets in the state. Thank you for your time and this opportunity to share my feedback.

Sincerely,

Renée McCullen

cc: Coastal Resources Commission Members
Ken Richardson

(Renee McCullen's attachment Topsail Beach IHA 2019.pdf)

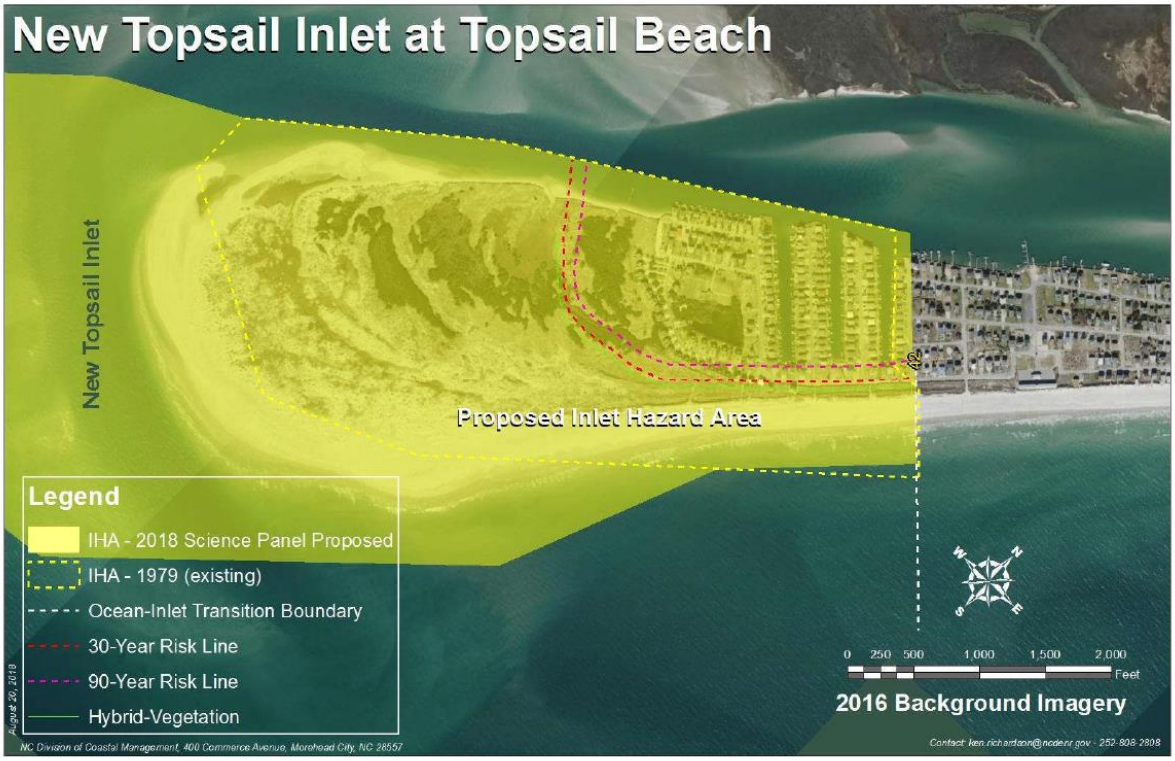


Figure C14. Proposed Inlet Hazard Area at New Topsail Inlet (Topsail Beach).

(Renee McCullen's attachment NTB IHA 2019.pdf)

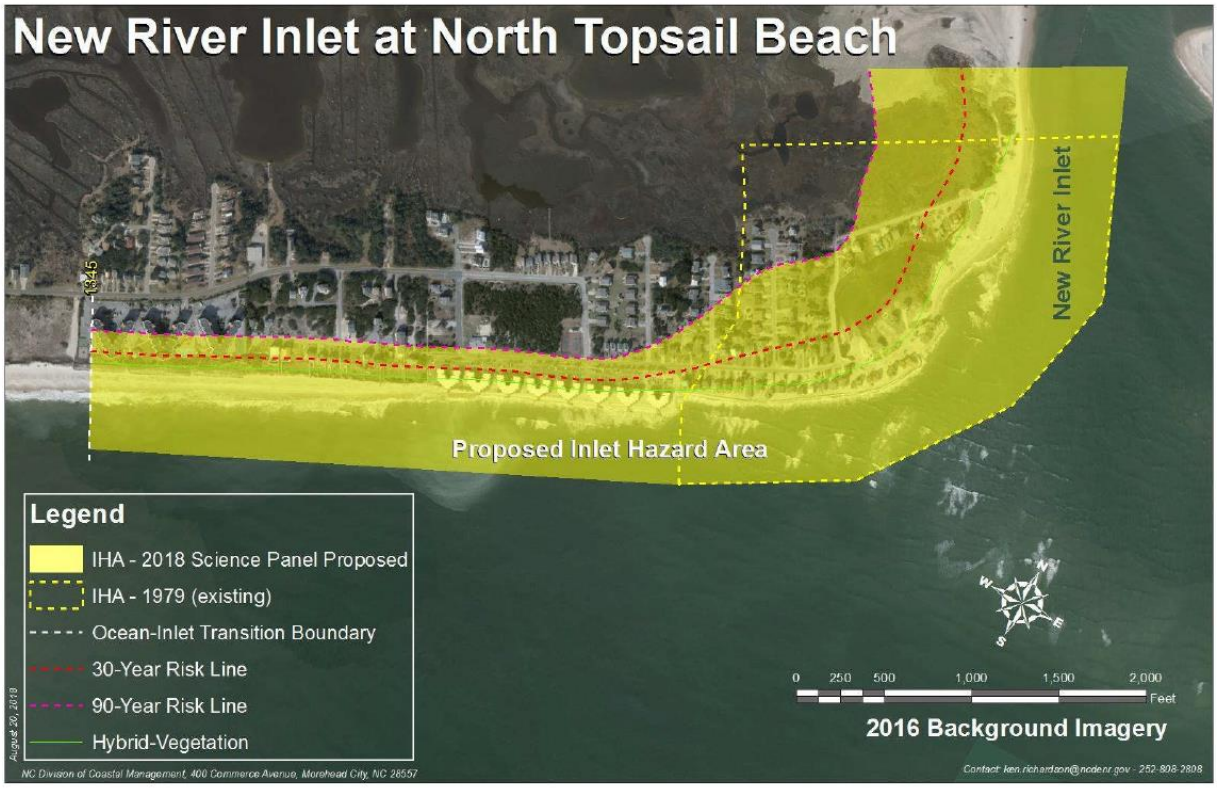


Figure C15. Proposed Inlet Hazard Area at New River Inlet (North Topsail Beach).

(Renee McCullen's attachment: vegetation lines multiple years_topsail-1.jpg)

(Renee McCullen's attachment: 1962-2003 aerial New Topsail Inlet.pdf)

South Topsail Island—Aerial Views 1962 / 1972 / 2003


2003

(received: March 9, 2020)

Dear Mr. Richardson, Representative Iler, and Senator Rabon

My name is Jason Dameron. My wife, Marla, and I are the property owners of a home located at 387 E. 1st, Ocean Isle Beach, N.C. I am writing to you in regards to the new proposal for the Ocean Isle Beach Inlet Hazard Area. My wife and I were born and raised in Columbus County. Tabor City, to be exact. We have been visiting Ocean Isle Beach since we were kids and in 2010 decided to purchase a home in Ocean Isle Beach. We are deeply concerned about the proposed boundaries for the new Inlet Hazard area which would include our home. Our home is used for both personal vacation with friends and family as well as investment as we rent our house the majority of the summer months. We are anxious and deeply concerned about the potential financial impacts we would incur wit the inclusion of our property within the Inlet Hazard area; specifically, the economic impact on tourism and the affect it would have on rental income, the decline in home value, the increase with insurance premiums, and the potential to become uninsurable. These concerns have resulted in my wife and I seriously considering selling our property to avoid these foreseeable impacts. I have had multiple discussion with other property owners and neighbors including but not limited to Dr. Toya Danzey, Anne Borden, Dr. Earl Smith, Jamie Morphis, and Frank Williamson who share in my concerns. In addition, with his approval, I have attached a list of specific issues detailed by Dr. Earl Smith's expert analysis. Dr. Smith happens to be my neighbor in Ocean Isle Beach.

Specific Issues:

1) Science Panel Recommendation Document Contains Multiple Errors, Omissions, Misstatements and Contradictions
Details of 7 significant document problems are provided. These are severe enough that the Science Panel Recommendation Document must be revised and updated. In its present form, it is not suitable as a reference document for any regulatory purpose.

2) IHAM Methodology Is Built on an Unstable Foundation
This illustrative example of the use of the IHAM methodology in Section 2.4 was intended to show how the methodology works to find the alongshore boundary of the Inlet Hazard Area (IHA). It reveals two things.
1. First, based on the alongshore boundary definition stated in the Executive Summary of the report, it is immediately apparent that the location identified as the boundary in the recommendation cannot possibly meet the criteria of that definition. There is a location that meets the definition.
2. Second, the example reveals a subtle invocation of a fourth, different boundary location definition in the recommendation. This one lacks disclosure and quantification. As such, it relies fully on modifications based on Science Panel professional knowledge. More importantly, such definition changes undermine the foundation on which the IHAM

methodology is built.
This issue is explained in detail with diagrams. The definition of the IHA alongshore boundary location is foundational to the methodology and must be fully specified and followed.

3) IHAM Does Not Work as Claimed
The purpose of this latest recommendation from the Science Panel is to present the Inlet Hazard Area Method (IHAM) and revised IHA maps. The problem is that the methodology works without modification only about 1/2 of the time. The definition of the alongshore location of the inlet hazard boundary is executed by the IHAM methodology. The boundary se2ng process is incompletely specified and it depends heavily on the professional knowledge of the panel. That does not constitute a high quality, repeatable process. The IHAM must be fixed or replaced so that it works “well at most of the inlets, requiring no additional modification” as claimed.
Response to 2019 Inlet Hazard Area Boundary Update

4) Hybrid Vegetation Line
As communicated at the OIB workshop on January 9, 2020, the hybrid vegetation lines are only used for defining the landward extent of the IHA. However, the 30-Year and 90-Year Risk Lines from the HVL reference line and the related statements about them imply that they could be used later. So, it is unclear what stature those recommendations might have in the future if this report becomes a reference document. The document must clearly state that there are no recommended uses of the 30- or 90-Year risk lines or the HVL other than se2ng the landward extent of the IHA.

5) Recommendation for Updating Inlet Hazard Boundaries
The recommended 5 year updates should be adopted but a set of metrics that ensures a repeatable process must be determined and used.

Additionally, there has NOT been a reference in the Scientific Panel's Document in regards to how the current beach re nourishment project and the future terminal groin project impacts the Scientific Panel's analysis. These things must be considered in the analysis.

In closing, I would like to thank each of you for your time, work, and dedication in addressing this matter. Please feel free to contact me for any questions, concerns, or feedback you might have. I can be reached any time via mobile phone 843-861-8448 or by email.

Respectfully,
Jason and Marla Dameron
Property owners 387 E. 1st St. Ocean Isle Beach, N.C.
Jason Dameron <jrdameron@hotmail.com>